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ABSTRACT

One of four curriculum guides designed to aid teachers of grades K-9 in implementing a balanced, dynamic traffic safety program, this level C guide contains materials for teachers of grades 4-6. Four units in pedestrian, bicycle, school bus, and passenger safety are presented, and minicycle and optional farm vehicle safety units are introduced. The scope of all units is widened to include activities in the community. Activities include indepth identification of hazards, opportunities for problemsolving, and exploration of attitudes. The natural laws which affect vehicles and pedestrians are also presented. Each unit is divided into general topic concepts, with each topic including behavioral objectives, content outline, and suggested activities. Each unit also contains material for the teacher to present to the class or to use as background information, artwork and other worksheets for use as reproduction masters, and resource lists. Materials for a safety game are appended. (Metric measurements are used in this guide.) (TA)

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ED140085

PROFESSIONAL GUIDE

K-9 TRAFFIC SAFETY RESOURCE CURRICULUM

LEVEL C

State of North Carolina
Department of Public Instruction

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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The opinions, findings, and conclusions expressed in this publication are those of Research Triangle Institute and not necessarily those of the National Highway Traffic Safety Administration.

June 1975

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PREFACE

North Carolina's K-9 Traffic Safety Resource Curriculum is a key element in a total program designed to reduce casualties on North Carolina's highways. Recognizing the societal problem represented by 3,500 pedestrians and bicyclists killed and injured annually in North Carolina, the Governor's Highway Safety Program (GHSP) has developed an eight-point plan to increase pedestrian and bicycle traffic safety. The first steps in this plan involve the preparation of guidelines for implementing State and community programs which address the problem in the areas of community planning, highway and traffic engineering, traffic enforcement, and public information and education.

Because approximately 50 percent of the pedestrians and bicyclists killed or injured is under 15 years of age, emphasis is being given to a timely, viable curriculum for K-9 which incorporates pedestrian, bicycle, passenger, and motorcycle safety and preparation for driver education.

North Carolina's K-9 Traffic Safety Resource Curriculum has been prepared under sponsorship of GHSP by the Research Triangle Institute with the assistance of Appalachian State University, East Carolina University, the University of North Carolina Highway Safety Research Center, and the National Safety Council. Valuable assistance was provided by an Advisory Committee on Traffic Safety Curriculum established by the Department of Public Instruction. Teachers and school administrators from Asheville city, Buncombe County, Greenville city, and Pitt County school systems participated in a series of developmental workshops which provided meaningful guidance in formulating instructional techniques and concepts.

The goal of this Professional Guide is to provide a useful resource to aid teachers in implementing a balanced, dynamic traffic safety program responsive to the needs of the young people of North Carolina.

TO THE TEACHER

You may be wondering what place traffic safety education has in your classroom. This Professional Guide to K-9 Traffic Safety Resource Curriculum offers valuable experiences to both you and your students. Through traffic safety education, you may help your students develop many important skills with which to deal with the world. Concerns for human life and the well-being of your students necessitate the introduction of a well-balanced, integrated traffic safety program into the schools of North Carolina. Approximately half of North Carolina's pedestrian and bicycle fatalities and injuries involves persons under 15 years of age: That is about 1,750 deaths and injuries a year. Traffic safety education can help reduce these casualties. It can also offer your students added insight into their relationship with the environment, and increase their self-confidence in dealing with the world by strengthing their ability to make informed judgments.

What is safety education? Safety education is the development of a sense of responsibility for oneself and others. This sense of responsibility can develop into a lifestyle which involves thinking ahead, identifying and assessing risks, and making informed, responsible decisions for safe behavior. For kindergarten children, this may mean simple learning to recognize and obey a signal light and watching out for themselves in a traffic situation. For young teenagers, it may be expressed as a concern for others and a sense of involvement in the well-being of their community.

How can you, the teacher, foster these attitudes and behaviors in your students? Each student has certain needs which must be fulfilled if he is to learn to think for himself and to behave safely. These needs include:

1. A Sense of How the Student Relates to the Traffic Environment. This includes an understanding of how the student as a pedestrian, a bicyclist, or a passenger relates to drivers.
2. Information about the Traffic Environment. The student needs to recognize and understand traffic signs, signals, and markings. Knowledge of what others expect of him--for example, knowledge of

the Rules of the Road--is helpful.

3. The Ability to Identify and Assess Hazards. What is an accident? The very term connotes an act of pure chance. But is this the true definition as it relates to traffic safety? Discuss this with your students. An accident is an unintended event which results in damage or injury, but most accidents are caused by a series of misjudgments. Students need to explore the causal relationships in accidents and to learn to identify behaviors which are likely to result in accidents.
4. Knowledge of How to Avoid or Handle Hazardous Situations. The student needs to identify alternative actions which produce safe results, as well as to practice safe, responsible behaviors. These needs include practice in motor and perceptual skills.
5. A Positive Attitude toward Safety. The student needs to develop a positive feeling about turning down unreasonable risks. Acting safely means thinking ahead and acting in one's best interest. The student should be led to consider such questions as: Is it smart to act safely? Why do people take unreasonable or irresponsible risks? Your attitude as the teacher will have a tremendous effect upon the attitudes of your students. Your creativity and your enthusiasm in presenting safety habits as part of an affirmative lifestyle can make the program a success. Your actions in the classroom which show you believe safety is an important goal will influence the formation of responsibility in your students.

Total Program Organization

The K-9 Traffic Safety Resource Curriculum is divided into four groups of grade levels.

Level A - Level A corresponds approximately to the K-1 grade levels. Little or no reading skill is required. Units in pedestrian, bicycle, school bus, and passenger safety are presented. Emphasis is placed on development of perceptual skills, especially in regard to pedestrian safety.

Level B - Level B is aimed at second and third graders. Pedestrian, bicycle, school bus, and passenger safety units are included. Perceptual and judgmental skills are again emphasized. Bicycle safety becomes extremely important, since this is the age at which most youngsters begin driving their bicycles on the street.

Level C - Level C corresponds to the 4-5-6 grade levels. Units in pedestrian, bicycle, school bus, and passenger safety are presented, and minicycle and optional farm vehicle safety units are introduced. The scope of all units is widened to include activities in which students can reach out into the community to investigate and express their concern for the safety of others as well as themselves. Activities include indepth identification of hazards, and opportunities for problem solving and exploration of attitudes. The natural laws which affect vehicles and pedestrians are also presented.

Level D - The structure of Level D, prepared for grades 7-9, differs from that of the elementary units. The emphasis in Level D is on preparation for the driving task. Three units are presented. The first in the series (grade 7) presents more sophisticated approaches to pedestrian, bicycle, and school bus safety, plus an optional section on farm vehicles. The second unit, presented in the eighth grade, deals with the history of the automobile, automotive safety devices, trip planning, and other activities which begin changing the student's focus of concern to the driver's responsibilities. Action projects are suggested which would allow the students to apply their talents and safety knowledge to benefit the school and the community. The third unit deals directly with preparation for driver education. The highway transportation system and the relationships of the individual driver, pedestrian, and others to the system are explored. The students explore the mental and physical factors important to safe behavior behind the wheel. Attitude clarification and formation are emphasized.

Curriculum Structure

The material covered in each level is organized into units: Pedestrian Safety, Bicycle Safety, School Bus Safety, Passenger Safety, and other units which are appropriate to a particular level. Each unit is divided into general topics concepts. Under each concept heading are listed objectives--broad behavioral outcomes which the lessons attempt to encourage.

Next to Content for Discussion, which presents the facts which you will wish to convey to the class or that you might find helpful as background information. The content is written in the language you would use to speak to your class. Suggested learning Activities follow. Activities are listed numerically. Artwork and other worksheets which you might find useful to reproduce, either as transparencies or in quantity for each student in your class, are called Masters for Reproduction. Masters for Reproduction are labelled numerically according to each unit, with the identification number in the upper right-hand corner. They are inserted directly after the concept containing their first reference in the text. Stories, poems, songs, and so on are found in a supplemental section at the end of the unit. Resource lists are found at the end of the unit. You may wish to give this list to your media specialist. While the entire curriculum is organized so that it may be used for regular, independent safety lessons, the activities readily lend themselves to integration within existing subject areas. If you prefer this method, a Subject Area Cross Reference list is provided in the backs of Volumes A, B, and C.

This curriculum allows for a wide variety of activities, especially in terms of role playing, hands-on activities, and decisionmaking by the student. The resource materials and activities are arranged to inform the student of his special place in the traffic environment. From this understanding of his own and the responsibilities and limitations of others, the student can make intelligent decisions about his behavior.

CREDIT TO. . .

Much of the teacher information, many of the activities and masters for reproduction, as well as the resource lists have been reprinted or adapted from guides and materials developed by other States and sources.

For this reason, credit is indicated by code number throughout the guide. Following are the numbered reference sources.

1. Safety Instructional System
   Maryland State Department of Education
   Baltimore-Washington International Airport
   Baltimore, Maryland 21240

2. Safety Education Units for Illinois Elementary Schools
   State of Illinois
   Office of the Superintendent of Public Instruction
   Springfield, Illinois 62706

3. Teaching about Safety Resource Units
   National Safety Council
   425 North Michigan Avenue
   Chicago, Illinois 60611

4. A Traffic Safety Multi-Media Program K-12
   Kokomo-Center Township Consolidated School Corporation
   Kokomo, Indiana 56901

5. School Safety Magazine
   National Safety Council
   425 North Michigan Avenue
   Chicago, Illinois 60611

6. All about Bikes
National Safety Council
425 North Michigan Avenue
Chicago, Illinois 60611

7. Curriculum Guide for Safety Education Grades K-6
Michigan Department of Education
Michigan Office of Highway Safety Planning
Lansing, Michigan 48902

8. Teaching Children about Safety Belts
U. S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D. C. 20590

9. K-6 Indiana Traffic Safety Education Curriculum
Indiana State Department of Public Instruction
Indianapolis, Indiana

10. Steps to Safety
Raleigh Public Schools
Raleigh, North Carolina 27605

11. Traffic Safety Education Performance Curriculum
Connecticut Department of Education
Hartford, Connecticut 06115

12. Petroleum Power Program
National 4-H Service Committee, Inc.
Program Services
150 North Wacker Drive
Chicago, Illinois 60606

13. A Resource Curriculum in Driver and Traffic Safety Education
Automobile Safety Foundation
Washington, D. C.

14. Alcohol and Alcohol Safety, a Curriculum Manual for Junior High Level (Vol. I)
U. S. Department of Transportation
National Highway Traffic Safety Administration
400 Seventh Street SW.
Washington, D. C. 20591

15. Traffic Safety K-9 Curriculum Guide
Wisconsin Department of Public Instruction
Madison, Wisconsin 53702

NOTE ON THE METRIC SYSTEM

North Carolina State Board of Education has passed a resolution urging teachers to begin teaching the metric system to their students. By the 1981-82 school year, metrics will be the main system of measurement taught in the school. The Traffic Safety Resource Curriculum is designed to aid teachers in teaching metrics.

All measurements in the resource are presented in metric with the English equivalent following in parentheses. The only exceptions are on worksheets or diagrams where it would be too complicated to present this dual system on the same page. In those cases, a worksheet that is totally metric and another worksheet that is totally English are provided.

Note, too, that the equivalent measurements presented are not exact equivalents. Metric measurements have been rounded to the nearest multiple of five in most cases. The recommended teaching technique is to use metrics, not to convert from English. The equivalents are close enough to get a feel for the comparative quantities, but they are not precise. For example, the exact equivalent for 20 miles per hour is 32 kilometers per hour. However, the text will read 30 km/h (20 mph). When the Nation begins to use metrics, we will use multiples of 5, not odd numbers here and there.

If you wish to find more precise equivalents, or if you wish to use other metric measurements, a conversion table follows for your use.

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measurements

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in.	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
t	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l

Approximate Conversions to Metric Measurements

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
cm	centimeters	0.4	inches	in.
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.621	miles	mi
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes(1000 kg)	1.1	short tons	t
		VOLUME		
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal

NORTH CAROLINA STATE BOARD OF EDUCATION

Metric Resolution

WHEREAS, the Secretary of Commerce has found that increased use of the metric system of measurement in the United States is inevitable and has concluded that a national program to achieve a metric changeover is desirable and has recommended that immediate attention be given to the education of the public; and

WHEREAS, proposed federal legislation establishes a Metric Conversion Board to coordinate the voluntary conversion to the use of the metric system of measure in all sectors of our society; and

WHEREAS, it appears that such a bill will be passed making it national policy to facilitate and encourage the eventual substitution of the International Metric System of Measurement units for customary measurement units in education, trade, and commerce, making metric units predominant in a period of ten years; and

WHEREAS, 90% of the world's people and more than 75% of the world production and trade are currently employing the unified metric system of measurement; and

WHEREAS, the International System of Units (SI) is expanding its use in all major industries in the United States and many companies are adopting the metric system for production, marketing and advertising of their products; and

WHEREAS, the schools of North Carolina need to teach the complete use of such a system of measurement; now, therefore be it

RESOLVED, that North Carolina Public Schools provide increased opportunities for the learning of the modern metric system of measurement (SI) by the school year 1975-76. Instruction in the metric system should be in addition to instruction in the English System of weights and measures presently in use in the schools; provided, however, that the International Metric System of Weights and Measures shall be taught as the primary system of measurement beginning with the 1981-82 school year; and be it further

RESOLVED, that the State Board of Education adopt as policy the conversion of all measurement language to the International Metric System of Measurement (SI) in all phases of public education in North Carolina not later than the year 1981; and be it further

RESOLVED, that North Carolina institutions having approved programs of teacher preparation begin to provide for the teaching of the modern metric system (SI) by the school year 1975-76; and be it finally

RESOLVED, that this resolution be recorded in the Minutes of the State Board of Education, and copies be forwarded to the Governor, local Board of Education, to each Superintendent of Schools, and made available to the teachers in North Carolina, education, civic and industrial organizations, and to the Presidents of North Carolina institutions having approved programs of teacher preparation.

TRAFFIC SAFETY INFORMATION OFFICERS

Many activities suggest that a police officer will be a valuable resource. Contact the Information Officer for your county to come and speak to your class.

Sergeant G. L. Swanson Information Officer State Highway Patrol P. O. Box 1864 Greenville, North Carolina 27834 Phone - (919) 752-6118	Bertie, Hertford, Northampton, Halifax, Edgecombe, Pasquotank, Camden, Chowan, Currituck, Gates, Perquimans, Beaufort, Dare, Hyde, Tyrrell, Washington, Pitt, Martin, Craven, Carteret, Pamlico
Sergeant W. P. Register Information Officer State Highway Patrol P. O. Box 4450 Fayetteville, North Carolina 28306 Phone - (919) 484-1181	Cumberland, Sampson, Onslow, Jones, Dublin, Pender, Columbus, Bladen, New Hanover, Brunswick
Sergeant V. A. Griffin Information Officer State Highway Patrol P. O. Box 100 Cary, North Carolina 27511 Phone - (919) 829-3911	Nash, Wayne, Lenoir, Wake, Vance, Franklin, Warren, Wilson, Greene, Johnston, Harnett
Sergeant J. G. Lawrence Information Officer State Highway Patrol P. O. Box 20028 Greensboro, North Carolina 27420 Phone - (919) 379-5621	Chatham, Lee, Moore, Guilford, Durham, Orange, Person, Caswell, Granville, Alamance, Randolph
Sergeant J. M. Varner Information Officer State Highway Patrol P. O. Box 79 Salisbury, North Carolina 28144 Phone - (704) 636-0421	Davidson, Stanly, Montgomery, Rowan, Davie, Forsyth, Rockingham, Stokes, Cabarrus
Sergeant M. K. Holcomb Information Officer State Highway Patrol P. O. Box 670 Newton, North Carolina 28658 Phone - (704) 464-4210	Surry, Yadkin, Wilkes, Alleghany, Ashe, Caldwell, Burke, Iredell, Alexander, Catawba, Lincoln, Cleveland

Sergeant W. D. Stiles Information Officer State Highway Patrol P. O. Box 9567 Asheville, North Carolina 28805 Phone - (704) 298-4253	Yancey, Avery, Madison, Mitchell, Watauga, McDowell, Rutherford, Henderson, Polk, Transylvania, Buncombe, Haywood, Jackson, Swain, Cherokee, Clay, Graham, Macon
Sergeant R. M. Walsh Information Officer State Highway Patrol P. O. Box 1158 Monroe, North Carolina 28110 Phone - (919) 283-8101	Gaston, Richmond, Hoke, Scotland, Union, Anson, Robeson, Mecklenburg

LIEUTENANT A. W. RECTOR
COORDINATOR FOR THE STATE
STATE HIGHWAY PATROL
1100 NEW BERN AVENUE
RALEIGH, NORTH CAROLINA 27611

PEDESTRIAN SAFETY

Level C

PEDESTRIAN SAFETY UNIT - LEVEL C

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PEDESTRIAN SAFETY - LEVEL C

INTRODUCTION

You, the teacher, are concerned with the health and well-being of your students. This professional guide has been developed to help you express that concern in a direct, practical way by teaching your students the basic skills that they need to take responsibility for themselves in traffic situations. When they are walking from home to school, to the playground, or to a friend's house, they must learn to look out for themselves in the traffic environment. This unit suggests activities that can sharpen the skills that children need in order to survive in a traffic environment and to develop safe, responsible pedestrian habits upon which they will build throughout life.

To understand the extent of the pedestrian accident problem in North Carolina, consider these hard facts. Approximately 2,800 pedestrians are killed or injured annually in North Carolina. Forty-four percent of the pedestrians killed or injured are under 15 years of age. In 1973, there were 918 children killed or injured. The facts indicate that most accidents result from unsafe behavior by the pedestrians. In the case of pedestrians under 15 years of age, over half of the deaths and injuries resulted from running into the street at midblock or at other places where there was no intersection. Another large percentage of accidents resulted from entering the road from behind a parked car and from crossing at an intersection. Another major problem is visibility. Small children are not easily visible to a driver and lack physical maneuverability and mature judgment. In addition, bad weather and darkness are dangerous times for pedestrians who are much more likely to be killed or severely injured during these times.

This unit has been developed to provide your students with the basic skills and knowledges they need to make intelligent decisions about traffic safety. It presents basic facts so that the students can understand the role of the pedestrian in the perspective of the total traffic environment. The student is given an opportunity to sharpen the distance judgment skills which a pedestrian depends upon to avoid accidents. Guidelines are presented for judging the degree of danger in situations such as walking after dark or crossing streets at intersections or nonintersections, and suggestions are presented for avoiding hazards. With these guidelines, a student may become more aware of dangerous situations and therefore be better equipped to avoid accidents.

A pedestrian, as well as a bicyclist or automobile driver, needs to recognize the function of traffic signs, signals, and markings. The traffic engineer has meticulously designed and placed these devices to aid the traveler. The traveler must know the exact meaning of those devices so the traffic engineer's messages are received.

Finally, the student is given the opportunity to develop his own code of pedestrian behavior. After the learning experiences, students can intelligently assess their own behavior and take responsibility for their behavior in traffic--a big step in reducing the involvements of children in traffic accidents.

UNIT OBJECTIVES

1. To develop safe, responsible, informed behavior in the children as pedestrians by:

   -Enabling the children to assess possible dangers and to act intelligently to avoid or respond to dangerous traffic situations.

   -Informing the children of the Rules of the Road, which they must obey, and developing their understanding of the limitations and rights of both pedestrians and automobile drivers.

2. To encourage the children to acquire good attitudes and practices for their safety and to be good examples for others.

PEDESTRIAN SAFETY - LEVEL C

UNIT CHECKLIST FOR TEACHERS

This Pedestrian Safety Unit Checklist is provided as a guide to assist you in determining your students' knowledge of pedestrian safety practices.

1. Do your students always make sure that they see and are seen in the traffic environment?
2. Do they wear white, bright, or reflective material when they walk after dark?
3. Do they yield to turning or oncoming cars?
4. Are they aware of pedestrian hazards and how to avoid them?
5. Do they avoid crossing at midblock or stepping from behind parked cars?
6. Do they cross at guarded or controlled intersections whenever possible?
7. Do they obey traffic signals and signs?
8. Do they walk, not run, across streets?
9. Do they avoid playing in the street?
10. Do they choose the safest routes to friends' houses, to school, and other destinations?
11. Do they walk facing traffic when no sidewalk exists?
12. Do they assume responsibility for themselves and others in the traffic environment?

RATE YOURSELF AS A PEDESTRIAN

1. Do you always make sure that you see and are seen in the traffic environment?
2. Do you wear white, bright, or reflective material when walking after dark? Why is this important?
3. Do you yield to turning or oncoming cars?
4. Are you aware of pedestrian hazards and how to avoid them?
5. Do you avoid crossing at midblock or stepping from behind parked cars?
6. Do you cross at guarded or controlled intersections whenever possible?
7. Do you obey traffic signs and signals?
8. Do you walk, not run, across streets?
9. Do you avoid playing in the street?
10. Do you choose the safest routes to friends' houses, to school, and other destinations?
11. Do you walk facing traffic when no sidewalk exists?
12. Do you assume responsibility for yourself and others in the traffic environment?

PEDESTRIAN SAFETY - LEVEL C

CONCEPT I: PERSONAL INFORMATION

OBJECTIVE

The student should be able to recite the following:

1. full name,
2. home address,
3. name of school,
4. home telephone number,
5. parents' names,
6. place of work of either parent.

ACTIVITIES

1. Emergency Information. Have the students design an emergency information form which requests their full name, etc. (listed above), and any additional information that they might think is necessary, such as family doctor, their route to and from school, bus number, and schedule.
2. Class Directory. Have the students make up a class directory supplying all necessary information. Make copies and distribute to all members of the class.
3. ID Cards. Have the children make identification cards for their wallets or billfolds. The ID cards should include the information outlined in the objectives above. Note: If the students design a form, you may make duplicates by using a stencil.

PEDESTRIAN SAFETY - LEVEL C

CONCEPT II: BASIC FACTS ABOUT PEDESTRIANS

OBJECTIVE

The student should be able to define "pedestrian" and various terms relating to traffic safety and to explain the special problems a pedestrian presents to the driver of a vehicle.

CONTENT FOR DISCUSSION

A pedestrian is any traveler on foot. A pedestrian has a big responsibility to himself and to others when he travels.

A pedestrian should always be alert for dangers. A pedestrian is small and not as visible as a car. He must be sure that the auto driver sees him and that he sees the auto. A pedestrian is completely unprotected in a crash with a car. That is why pedestrians are more likely to be killed or severely injured in a traffic accident than the occupants of a car.

A pedestrian has special places where he should walk. Sidewalks are built for the protection of the pedestrian. If no sidewalk exists, then a pedestrian should walk on the left side of the road, facing oncoming traffic. The pedestrian should get well away from the roadway when a car approaches him. The only time that a pedestrian should walk on the road or street is when he is crossing the street. Then he should walk within the white lines which mark a pedestrian crossing or at corners where imaginary parallel lines extend from the sidewalk on one corner to the corner across the street. Do not cross corners diagonally unless a crosswalk is marked on the pavement and there is a traffic signal which protects the pedestrian. The pedestrian has the right-of-way within a pedestrian crossing and at corners--nowhere else. However, no pedestrian wants to exercise this right-of-way without making sure that vehicles are going to yield the right-of-way to them. Who wants to be dead right?

The pedestrian is prohibited by law--and by common sense--from making abrupt, unexpected movements into traffic. A person should never enter the street from behind parked cars or run in the street at midblock or at corners.

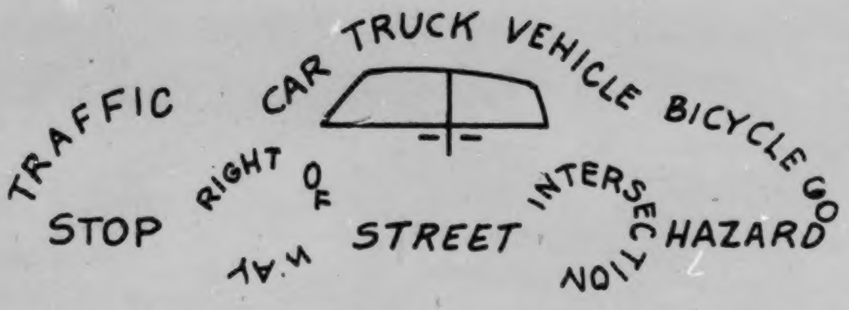
ACTIVITIES

1. Introduction. Talk about what the student does as a pedestrian.
   a. How much of the day do you spend walking?
   b. How many miles a day would you estimate that you walk?
   c. Why do you walk? What are the advantages?
   d. List the places the students normally walk to and from.
   e. What time of day do you walk? Are you more likely to be badly injured or killed during certain times of day? (dusk and after dark)
   f. When would you guess that most pedestrian traffic accidents occur? (3-7 p.m.) Why?
   g. Where do you walk? What special places have been developed to protect the pedestrian? (sidewalks, crosswalks)
   h. Why does the pedestrian need this protection?
2. Vocabulary Activities. Use language arts activities with vocabulary list to emphasize traffic safety words.

Vocabulary List

accident
automobile
car
crosswalk
emergency
go
guarded
hazard
highway
intersection
jaywalk
pedestrian
police officer
railroad
reflector
right-of-way
route
safety
safety patrol
sidewalk
signals
stop
stranger
street
traffic
truck
vehicle
visibility
yield

a. Draw a picture using the vocabulary words to outline the drawing.



Variation - Using the vocabulary words, have the students draw pictures of other vehicles that are seen in the traffic environment.

b. Use masters for reproduction to emphasize the vocabulary words.

1. Fill in the Blanks (p. 18 ; p. 19, answer sheet).
2. Safety Crossword Puzzle (p. 20 ; p. 21 , answer sheet).
3. Braingame (p. 22 ; p. 23 , answer sheet).
4. Matching Game (p. 24 ; p. 25 , answer sheet).
5. Unscramble the Safety Words (p. 26 ; p. 27 , answer sheet).
6. Safety Puzzle (p. 28; p. 29, answer sheet).

3. Introductory Films. Easy Steps from Film Loops, Inc., or I'm No Fool as a Pedestrian, by Walt Disney Productions.

4. Introductory Audio-Filmstrips. Your Safety Adventures in Traffic, Parts I and III. (Check for appropriate grade level; it may be too elementary).

PEDESTRIAN WORKSHEET

FILL IN THE BLANKS

Use the following words to fill in the blanks below:

jaywalk
right-of-way
route
safety patrol
highway
hazard
street
yield
vehicle
traffic
pedestrian
crosswalk
intersection
stranger
sidewalk

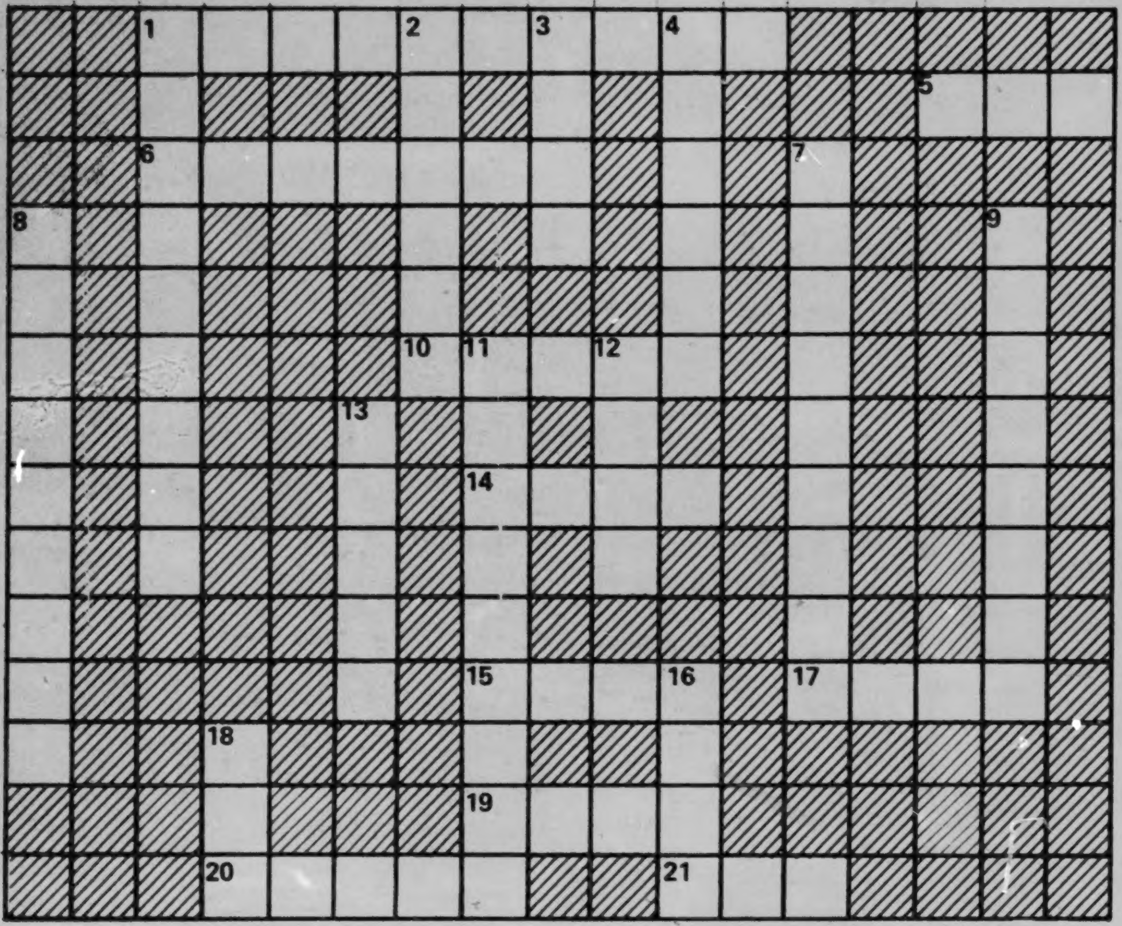
1. A ______________________ is anyone walking.
2. To have the _________________________ is to have the right to go first.
3. A ____________________ is a person not known, seen, or heard before.
4. The ___________________ is the road to take or the way to go.
5. A _________________________ is a marked crossing.
6. A _______________________ is a risk or danger.
7. ________________________ is composed of people, cars, and bicycles coming and going along a way of travel.
8. To ___________________ is to let the other person go first.
9. To __________________________ is to cross a street in midblock or outside of pedestrian crosswalks.
10. An ________________________ is a place where two or more roads cross one another.
11. A _______________________ is a main public road or route.
12. A ________________________ is a place to walk at the side of a street, usually paved.
13. A _____________________ is a road in a city or town.
14. A ___________________________________ is a person who helps guard your safety.
15. A _______________________ is a car, bicycle, bus, truck, or any means of carrying people or goods on land.

ANSWER SHEET

FILL IN THE BLANKS

1. A *(pedestrian)* is anyone walking.
2. To have the *(right-of-way)* is to have the right to go first.
3. A *(stranger)* is a person not known, seen, or heard before.
4. The *(route)* is the road to take or the way to go.
5. A *(crosswalk)* is a marked crossing.
6. A *(hazard)* is a risk or danger.
7. *(traffic)* is composed of people, cars, and bicycles coming and going along a way of travel.
8. To *(yield)* is to let the other person go first.
9. To *(jaywalk)* is to cross a street in midblock or outside of pedestrian crosswalks.
10. An *(intersection)* is a place where two or more roads cross one another.
11. A *(highway)* is a main public road or route.
12. A *(sidewalk)* is a place to walk at the side of a street, usually paved.
13. A *(street)* is a road in a city or town.
14. A *(safety patrol)* is a person who helps guard your safety.
15. A *(vehicle)* is a car, bicycle, bus, truck, or any means of carrying people or goods on land.

SAFETY CROSSWORD PUZZLE



Across

1 one who is moving on foot
5 look; watch
6 moving vehicles on streets or highways
10 be ready to stop for traffic
14 did take
15 opposite of go
17 a path for vehicles to travel
19 garment worn about the shoulders
20 opposite of left
21 an article of clothing worn on the head

Down

1 one who tells when it is safe to cross
2 safe action with no accidents
3 a contest for speed, on foot or in vehicles
4 in a circle; all about
7 a light or glass object which reflects light
8 a uniformed officer of the law
9 a system of roads for trains
11 to meet or cross at a point
12 Stop, __________, listen.
13 Use the brain to ___________.
16 a course or route
18 one kind of vehicle

ANSWER SHEET

SAFETY CROSSWORD PUZZLE

▨	▨	1 P	E	D	E	2 S	T	3 R	I	4 A	N	▨	▨	▨	▨	▨
▨	▨	A	▨	▨	▨	A	▨	A	▨	R	▨	▨	▨	5 S	E	E
▨	▨	6 T	R	A	F	F	I	C	▨	O	▨	7 R	▨	▨	▨	▨
8 P	▨	R	▨	▨	▨	E	▨	E	▨	U	▨	E	▨	▨	9 R	▨
O	▨	O	▨	▨	▨	T	▨	▨	▨	N	▨	F	▨	▨	A	▨
L	▨	L	▨	▨	▨	10 Y	11 I	E	12 L	D	▨	L	▨	▨	I	▨
I	▨	M	▨	▨	13 T	▨	N	▨	O	▨	▨	E	▨	▨	L	▨
C	▨	A	▨	▨	H	▨	14 T	O	O	K	▨	C	▨	▨	R	▨
E	▨	N	▨	▨	I	▨	E	▨	K	▨	▨	T	▨	▨	O	▨
M	▨	▨	▨	▨	N	▨	R	▨	▨	▨	▨	O	▨	▨	A	▨
A	▨	▨	▨	▨	K	▨	15 S	T	O	16 P	▨	17 R	O	A	D	▨
N	▨	▨	18 C	▨	▨	▨	E	▨	▨	A	▨	▨	▨	▨	▨	▨
▨	▨	▨	A	▨	▨	▨	19 C	O	A	T	▨	▨	▨	▨	▨	▨
▨	▨	▨	20 R	I	G	H	T	▨	▨	21 H	A	T	▨	▨	▨	▨

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4 in a circle; all about

7 a light or glass object which reflects light

8 a uniformed officer of the law

9 a system of roads for trains

11 to meet or cross at a point

12 Stop, __________, listen.

13 Use the brain to ____________.

16 a course or route

18 one kind of vehicle

BRAINGAME - PEDESTRIAN SAFETY

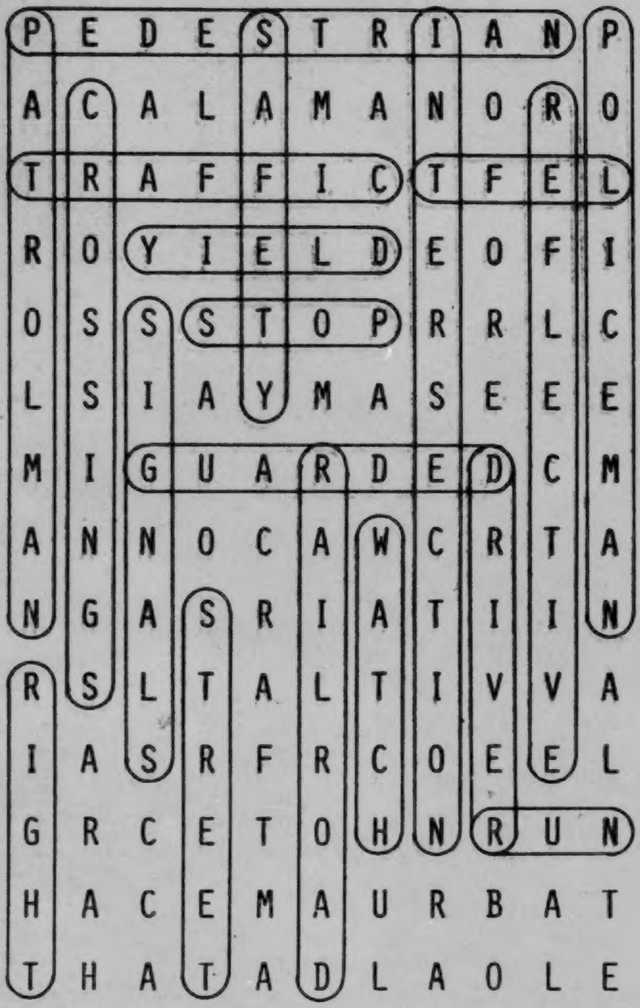
P	E	D	E	S	T	R	I	A	N	P
A	C	A	L	A	M	A	N	O	R	O
T	R	A	F	F	I	C	T	F	E	L
R	O	Y	I	E	L	D	E	O	F	I
O	S	S	S	T	O	P	R	R	L	C
L	S	I	A	Y	M	A	S	E	E	E
M	I	G	U	A	R	D	E	D	C	M
A	N	N	O	C	A	W	C	R	T	A
N	G	A	S	R	I	A	T	I	I	N
R	S	L	T	A	L	T	I	V	V	A
I	A	S	R	F	R	C	O	E	E	L
G	R	C	E	T	O	H	N	R	U	N
H	A	C	E	M	A	U	R	B	A	T
T	H	A	T	A	D	L	A	O	L	E

Find these words:

Pedestrian
Yield
Stop
Guarded
Traffic
Signals
Crossings
Reflective
Street
Watch
Patrolman
Safety
Intersection
Railroad
Policeman
Driver
Left
Right
Run

ANSWER SHEET

BRAINGAME - PEDESTRIAN SAFETY



P	E	D	E	S	T	R	I	A	N	P
A	C	A	L	A	M	A	N	O	R	O
T	R	A	F	F	I	C	T	F	E	L
R	O	Y	I	E	L	D	E	O	F	I
O	S	S	S	T	O	P	R	R	L	C
L	S	I	A	Y	M	A	S	E	E	E
M	I	G	U	A	R	D	E	D	C	M
A	N	N	O	C	A	W	C	R	T	A
N	G	A	S	R	I	A	T	I	I	N
R	S	L	T	A	L	T	I	V	V	A
I	A	S	R	F	R	C	O	E	E	L
G	R	C	E	T	O	H	N	R	U	N
H	A	C	E	M	A	U	R	B	A	T
T	H	A	T	A	D	L	A	O	L	E

Find these words:

Pedestrian
Yield
Stop
Guarded
Traffic
Signals
Crossings
Reflective
Street
Watch

Patrolman
Safety
Intersection
Railroad
Policeman
Driver
Left
Right
Run

MATCHING GAME

1. Safety
2. Signals
3. Stop
4. Reflector
5. Crosswalk
6. Policeman
7. Railroad
8. Yield
9. Intersection
10. Patrolman
11. Guarded
12. Traffic
13. Pedestrian

___ one who moves on foot
___ moving vehicle on highways or streets
___ warning ahead
___ places marked for movement from side to side
___ an area protected by policemen or patrolmen
___ more than one road coming to a point
___ a beam or light that can be seen
___ watch and tell you when it's safe to cross
___ come to a complete stand still
___ partially stop to see clear movement
___ use for trains to move on
___ a person who protects you
___ preventing careless accidents

Use the same words above: Divide into syllables and put accent mark at the correct syllable.

ANSWER SHEET

MATCHING GAME

1. Sáfe/ty
2. Síg/nals
3. Stop
4. Re/fléc/tor
5. Cróss/walk
6. Po/lice/mán
7. Ráil/road
8. Yield
9. In/ter/séc/tion
10. Pa/tról/man
11. Guárd/ed
12. Tráf/fic
13. Pe/dés/tri/an

(13) one who moves on foot

(12) moving vehicle on highways or streets

(2) warning ahead

(5) places marked for movement from side to side

(11) an area protected by policemen or patrolmen

(9) more than one road coming to a point

(4) a beam or light that can be seen

(10) watch and tell you when it's safe to cross

(3) come to a complete stand still

(8) partially stop to see clear movement

(7) use for trains to move on

(6) a person who protects you

(1) preventing careless accidents

Use the same words above: Divide into syllables and put accent mark at the correct syllable.

UNSCRAMBLE THE SAFETY WORDS

1. setraindeps
2. walrocsks
3. facirft
4. diely
5. pots
6. farcule
7. kolo
8. radiolra
9. waylajk
10. glinse life
11. fatesy traplo
12. manopilce

Write a sentence using each word above or give the meaning for each.

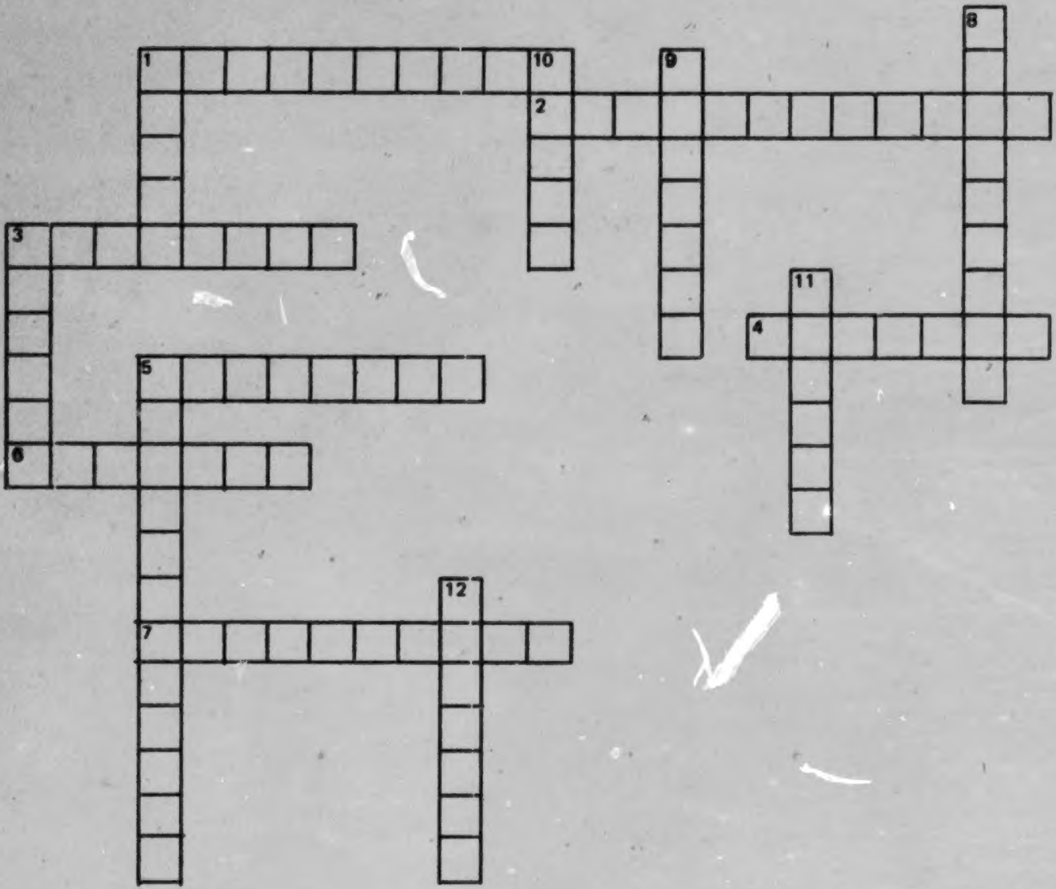
ANSWER SHEET

UNSCRAMBLE THE SAFETY WORDS

1.	setraindeps	(1.	*pedestrians)*
2.	walrocsks	(2.	*crosswalk)*
3.	facirft	(3.	*traffic)*
4.	diely	(4.	*yield)*
5.	pots	(5.	*stop)*
6.	farcule	(6.	*careful)*
7.	kolo	(7.	*look)*
8.	radiolra	(8.	*railroad)*
9.	waylajk	(9.	*jaywalk)*
10.	glinse life	(10.	*single file)*
11.	fatesy traplo	(11.	*safety patrol)*
12.	manopilce	(12.	*policeman)*

Write a sentence using each word above or give the meaning for each.

PEDESTRIAN SAFETY



Across

1 A pedestrian should always give vehicles the _____.

2 A place where two or more streets cross is an _____.

3 Whenever possible you should walk on the _____.

4 To _____ is to cross the street where there is no crosswalk.

5 A _____ is a person that you do not know.

6 You should always be careful when walking in heavy _____.

7 A _____ is anyone on foot.

Down

1 When walking to school you should always choose the closest _____.

3 Be especially careful of a busy _____.

5 Always obey your school _____.

8 Always cross the street at a _____.

9 Watch out for a speeding _____.

10 Always _____ the right-of-way to the vehicles.

11 Another word for danger is _____.

12 Step off to the shoulder of the _____ when a vehicle approaches.

Words to choose:

highway
pedestrian
vehicle
jaywalk

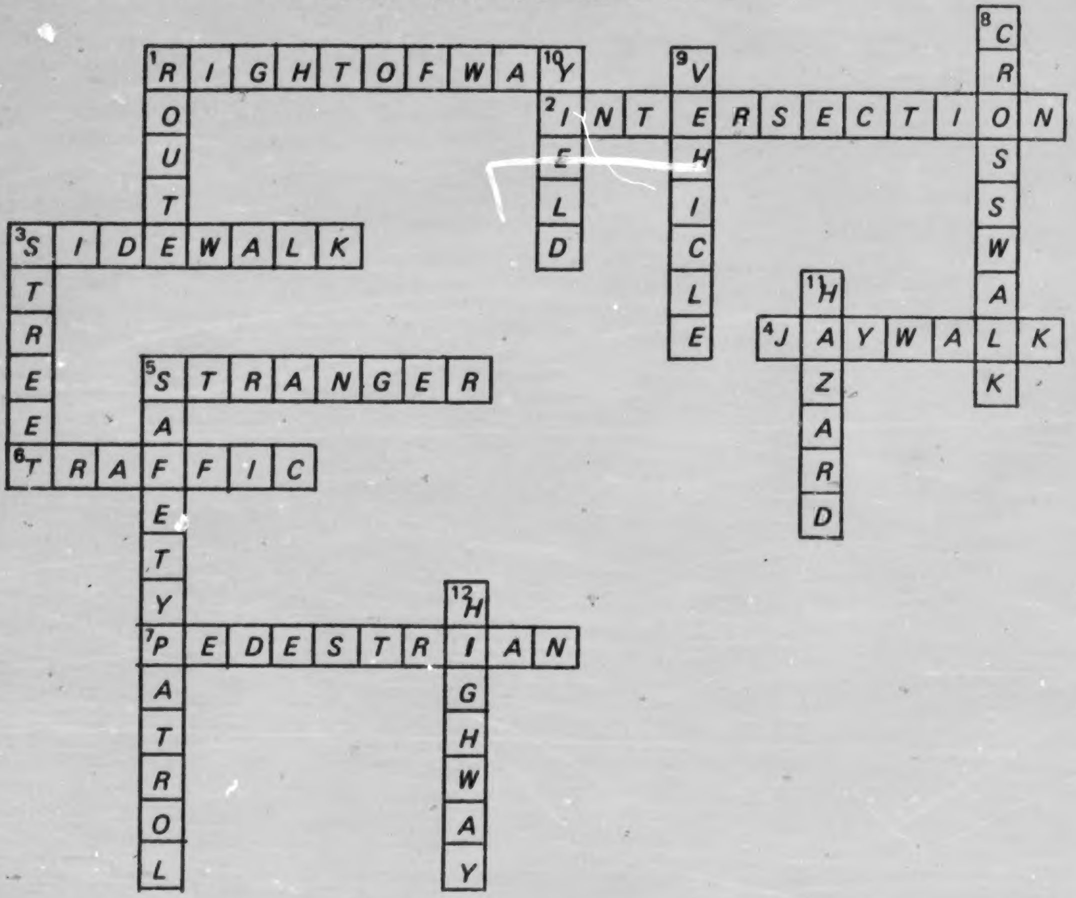
yield
stranger
crosswalk
route

hazard
sidewalk
intersection
street

right-of-way
safety patrol
traffic

ANSWER SHEET

PEDESTRIAN SAFETY


1 RIGHTOFWAY
2 INTERSECTION
3 SIDEWALK
4 JAYWALK
5 STRANGER
6 TRAFFIC
7 PEDESTRIAN
1 ROUTE
3 STREET
5 SAFETY PATROL
8 CROSSWALK
9 VEHICLE
10 YIELD
11 HAZARD
12 HIGHWAY

Across

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intersection
street
right-of-way
safety patrol
traffic

PEDESTRIAN SAFETY - LEVEL C

CONCEPT III: PEDESTRIAN SKILLS - PART A - GAP TIME

OBJECTIVE

Through a series of learning activities the student should be able to predict the gap time necessary to enable him to cross a street safely.

CONTENT FOR DISCUSSION

Every pedestrian needs to be able to estimate accurately the size of the "gap" in traffic that he needs in order to cross a street safely. Children must be encouraged to develop skill in judging an adequate gap in traffic to be able to cross a street safely. The following activities are designed to give the student practice in developing these specific skills. In many respects, this is probably the most important lesson a child can learn at this age level. If the students have had no experience with gap time, introduce it at this point and review distance judgment using the suggested learning activities.

ACTIVITIES

1. Judging Distance - How Far Is It?[1,9] Put a long strip of masking tape 3 or 4 meters (10 to 12 feet) long on the floor; ask the students to estimate the number of normal steps it would require to walk from one end of the tape to the other end. Have the children walk the tape to check for accuracy. Then ask the students how many big steps and small steps it will take to reach the end. After the answer is given, have the students to take the number of steps they named in order to check their judgment.

   The students will soon realize after their answers are given that they have overestimated or underestimated the number of steps. Through class discussion, bring out the importance of being able to find ways to compensate for overestimation or underestimation in distance judgment.

2. City Blocks and City Streets.[1] Cover a large table top with butcher paper. Draw, color, or cut and paste large squares to resemble city

cars on a street. Have the students discuss the various ways traffic flows and show some of the examples using the model cars. The students can make additional items for scenery such as trees, pedestrians, houses, etc., and can glue a toothpick to the back of each figure and mount it using modeling clay and a base.

Then have the students discuss various examples of distance judgment, and have them position the pedestrians and cars on the paper to show these examples:

a. Place a pedestrian in a position to show that he is getting ready to cross a street where two cars in different positions are on the same street. Ask the students to select two reference points and to tell whether or not the pedestrian will or will not have enough time to cross the street;

b. Have the students select different reference points to find whether or not it is safe to cross in 10 seconds or more than 10 seconds or less; and

c. Have the students pretend that they can only use the street blocks as reference points, and ask them to decide which blocks to use as guides.

3. Distance Judgment Situations.[1] Ask the students to write about situations of distance judgment and read them to the class members for them to decide the response to take for the given situation. For example:

a. Jim found the two reference points. He looked both ways and saw that there were no cars coming. However, a car had just backed out of a driveway which was located between the two reference points and it started moving quickly toward him. What should Jim do?

b. Fred wanted to cross the street. To the right the street was flat and he had a tree as a 10-second reference point. The street to his left was a hill which could be used as a 5-second reference point. Should Fred try to cross the street? Why or Why not? What alternatives could Fred use?

c. Sandy went for a walk with her grandmother. As they walked, Sandy noticed that her grandmother took two steps for each step she took. Before they crossed the street, Sandy found the two 10-second reference points. A car was approaching one of the points and was moving toward her; she decided that they should not cross even though the car seemed to be 12 seconds away. Why do you think Sandy chose not to cross?

Note to the teacher: These exercises were designed to lead to Gap Time Assessment. To judge distance, i.e., students need to develop the concept of where they are, first.

4. Gap Time.[1,9] The following activity is designed to give the student practice in estimating accurately the size of the gap in traffic he needs in order to cross a street safely. This technique is innovative and may seem rather complex initially; however, it is designed to introduce the students to a system which they can use to estimate safe crossing distances.

Step 1: The student must be able to count in "second" intervals--that is, one thousand one, one thousand two, etc.

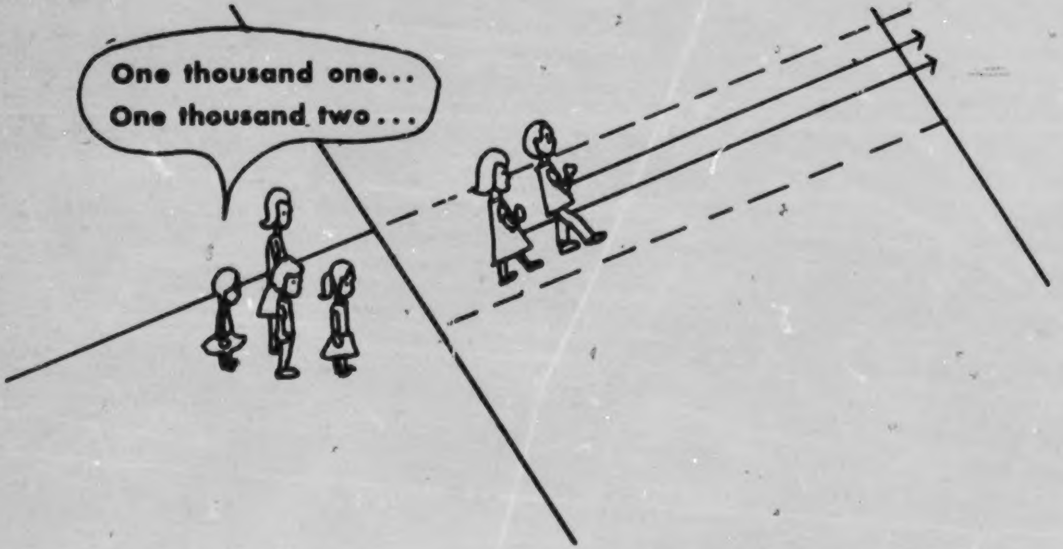
Procedure - Using a large clock with a sweep second hand, have students count as a group, one-thousand-one, etc., in unison with the second hand. Fourteen seconds is enough. This procedure must be practiced until the students have the ability to count accurate seconds.

Step 2 (Street): The student must be able to determine the time that it takes him to cross a street. Approximate timing is as follows:

4-lane street: 12-14 seconds
2-lane street: 10 seconds
1-lane street: 6-8 seconds

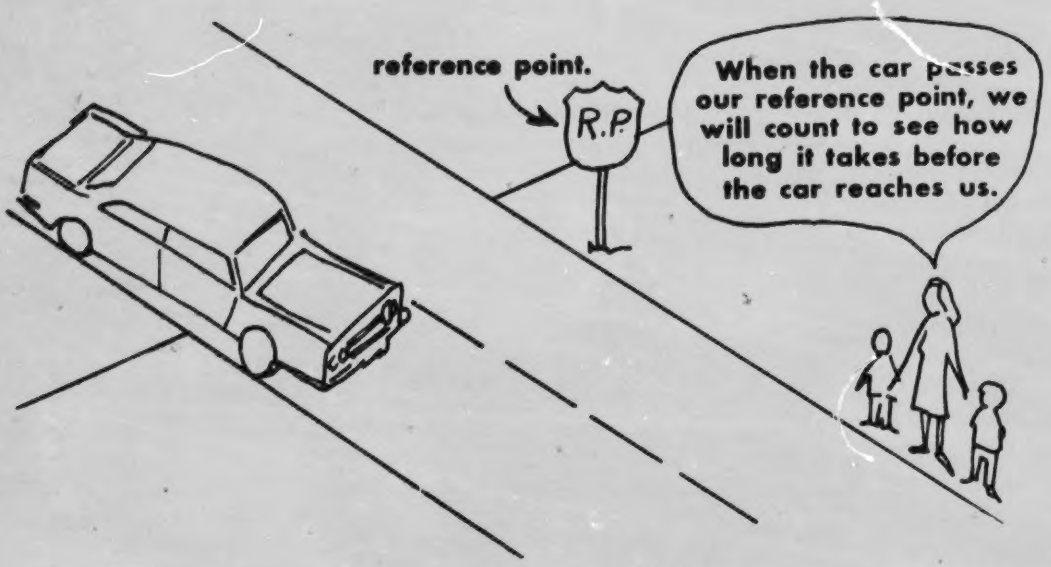
Procedure - Using a street without much traffic, have the two or three students walk across the street while the rest of the class is counting. The time will be representative of most of the class.

Students must understand that this is the time that they must have in order to get across a street safely.

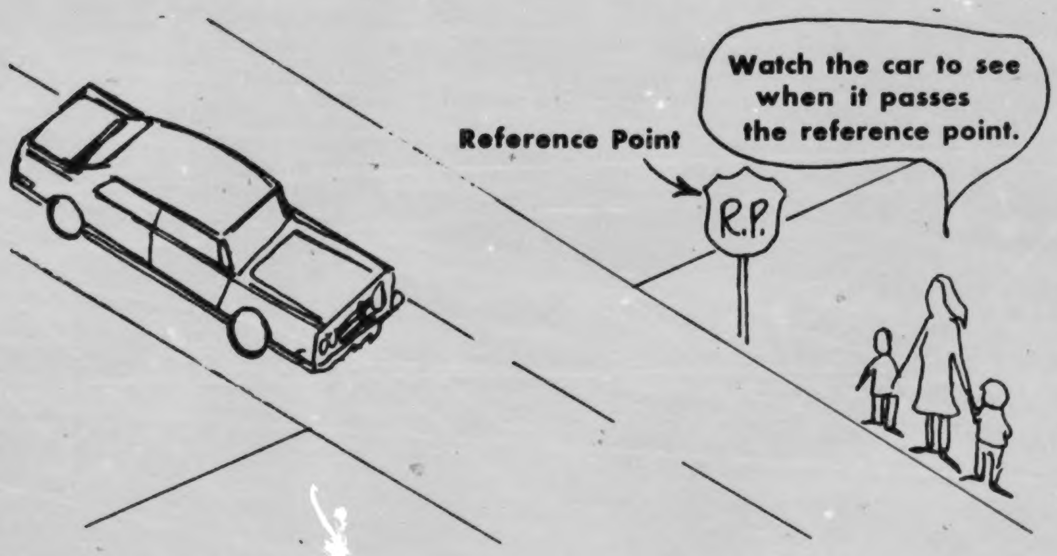

One thousand one...
One thousand two...

Step 3: Students need to estimate how far away a vehicle should be in order for them to cross safely. For example, if it takes approximately 10 seconds to cross a street, then a vehicle should be at least 12 or 13 seconds away when a person starts to cross. Students can locate a reference point (a tree, sign, fire hydrant, parked car, etc.) that is 12 seconds away at the speed the vehicle is going.

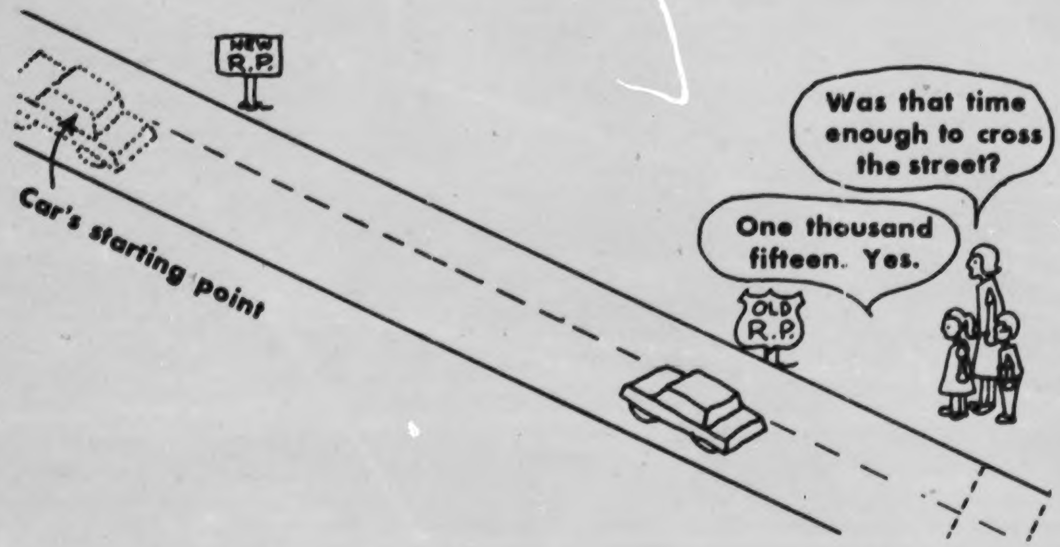
Procedure a - Using a street where vehicles pass regularly, have students stand where they want to cross (the "crossing point"). Then have students select a reference point beyond which they think a car should be, in order for them to cross safely (do one direction at a time).


reference point.
R.P.
When the car passes our reference point, we will count to see how long it takes before the car reaches us.

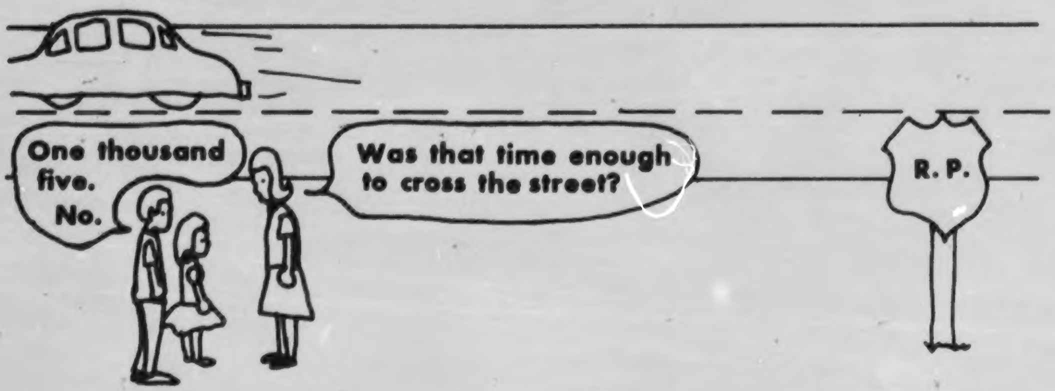
Procedure b - When a car passes the reference point on its way toward the crossing point, have students start counting in 1-second intervals. Have them stop when the car reaches the crossing point.


Watch the car to see when it passes the reference point.
Reference Point
R.P.

Ask the students: "How long did it take for the car to get from the reference point to the crossing point? Did it take 12 seconds or more? If the car had been at the reference point when you started to cross, would there have been enough time for you to cross without getting hit?

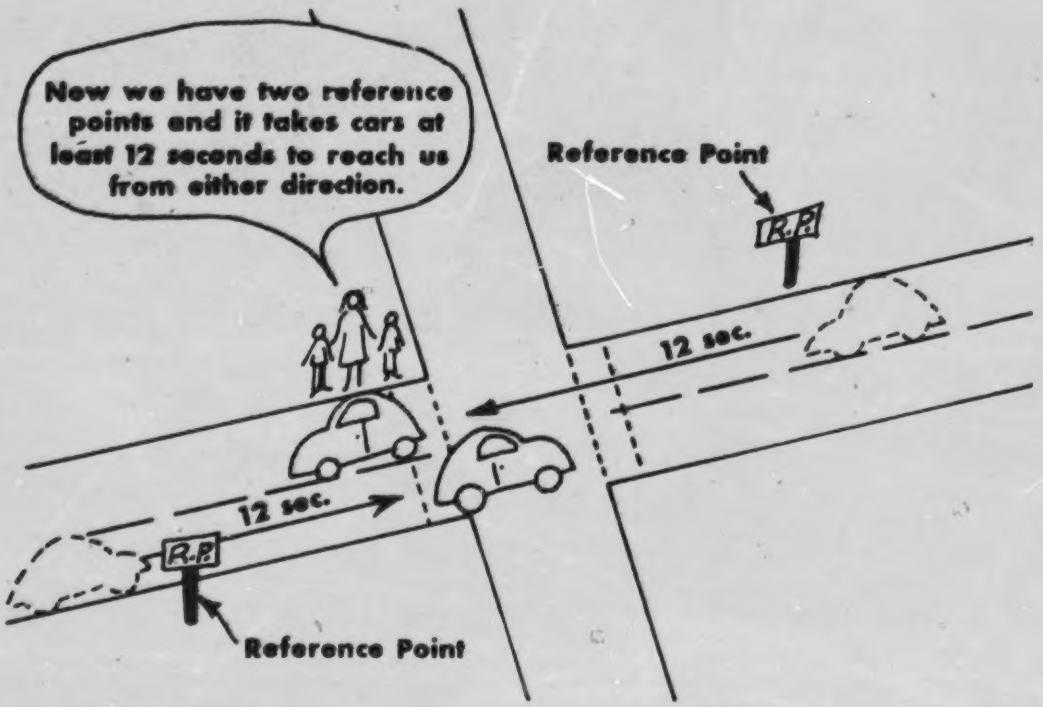

NEW R.P.
Car's starting point
OLD R.P.
Was that time enough to cross the street?
One thousand fifteen. Yes.

Procedure c - Practice choosing reference points that are closer than 12 seconds away and ask the students to count and see if there is enough time to cross.


One thousand five. No.
Was that time enough to cross the street?
R. P.

Step 4: Students need to practice using the reference point method until they can visually estimate how far away vehicles must be in order for them to cross safely.

Procedure - Take students to various locations and have them practice estimating reference points in both directions. Have them check their estimates by counting. Be sure students realize what these reference points mean--that cars must be in back of (further away from) these points when a person starts to cross a street in order to give him enough time to cross safely.


Now we have two reference points and it takes cars at least 12 seconds to reach us from either direction.
Reference Point
R.P.
12 sec.
12 sec.
R.P.
Reference Point

Suggestion: If possible, vary the situation somewhat by either changing locations to a different speed zone or setting up a situation in which an auto driver varies the speed. The 12-second interval will always hold true as a safe crossing time, but reference points in an area where cars are going 65 kilometers/hour (40 mph) will be farther away than reference points in an area where cars are going 30 kilometers/hour (20 mph). Ask students to explain why this is true.

Step 5: The "quick method" for finding reference points can be introduced after students have gained an understanding of the method described in procedure 1. Have students stand at the crossing point. When a car passes that point, have students start counting in 1-second intervals. Have them count out the 12 seconds. Note where the car is at that point and select a reference point even with the car's position. This reference point would then be used for cars coming in the opposite direction from that used to find the reference point. Ask the students to explain why this method works if cars are traveling at the same speed.

CONCEPT IV: PEDESTRIAN SKILLS - PART B - VISUAL PERCEPTION

OBJECTIVE

The student should demonstrate understanding of visual scanning and blindspots.

CONTENT FOR DISCUSSION

What a Driver Sees.[2] A driver may not be able to see well due to dirty windshields, improperly operating windshield wipers, inefficient or dirty headlights, headlight glare, fatigue, very congested traffic, neon signs, road markers, billboards, or other distractions.

On a clear road, a driver can see 75 or 85 meters (250 or 275 feet) ahead of him.

If a car is approaching from the opposite direction, a driver can only see 45 to 50 meters (150 to 175 feet) ahead of him.

As another car passes, a driver can only see 25 to 30 meters (90 to 100 feet) ahead of him.

After looking into approaching headlights at 65 kilometers/hour (40 mph), a driver may travel 60 meters (200 feet) before he can see easily.

A driver may need eye glasses.

ACTIVITIES

1. Experiments with Light [5]
   a. Light or dark adaptation. Light adaptation is the ability of the eye to adjust to the light, whereas dark adaptation is the ability of the eye to adjust to darkness.

      Divide the class into teams. Have one member of the team face a bright light for a few seconds. Have the second child notice how small the first child's pupils become. Then have the first child cover his eye with his hand for about 30 seconds. Have him remove his hand and let the second child see how the pupils have grown in size. The iris of the eye closes up in bright light to prevent too much light from entering the eye. When it is dark, the iris opens up again to let in more light. But it takes a little time for this to happen each time, and that is why a person is temporarily blinded by too little or too much light, especially if the change is sudden.

b. How we see color.[5] Look straight ahead. Have someone hold a sheet of colored paper at arm's length at the side of your body. Can you see what color or shape the paper is? Have the person slowly swing the paper forward until it is directly in front of your eyes. Can you see its color now?

When the paper was at your side, you were seeing it with the rods, which can distinguish light and dark, but are insensitive to color. When the paper was in front of you, you were seeing it with the color sensitive cones.

Hold your hand at arm's length out to your side so that you can see your palm but not your fingers while looking straight ahead. Now wiggle your fingers. Although the rods are not sensitive to color, they detect movement. The cones work best when there is plenty of light. When there is not enough light, the rods begin to take over. At twilight or dusk, the world seems to lose its brilliant color and everything turns gray. The first color that seems to fade is red. Green stays the longest. The colors are still there, but your vision of them is not.

2. Blindspots[2]

a. Another idea to bring in here is that drivers often have blindspots. An experiment used to show eye dominance might be useful here. Have the children tear a hole in a piece of paper and focus through this hole on a large object such as the classroom's clock. Have them close their left eyes and see if they can still see the object. Repeat by having them close their right eyes. When one eye is closed (usually the right eye), the children will not be able to see the object through the hole in the paper.

b. Ask the students what they feel a driver of an automobile sees and how this affects his driving. Ask what conditions might affect the driver's ability to see. Since a driver cannot always see a child, it might be a good idea for a child to look more than once when crossing a street. The following experiment might show why this is true.

Place two numbers 7.5 cm (3 inches) apart on a sheet of paper. See below:

7.5 cm
2 ←———————— ————————→ 4
3"

Hold this page about 25 centimenters (10 inches) from your face. Now, close your right eye or hold your hand over it. Stare at the 4. Start moving the page closer to your face. The 2 which you could see when you first looked at the page will suddenly disappear. It will appear again, of course, if you open both eyes or look at it. Suppose something like this had happened at an intersection just when you were ready to cross the street. If the 2 was a car heading straight for the spot where you are going to cross the street, you might step right into a serious accident. If your vision was partly obstructed or was fixed on some other car or object, you might never see the speeding car bearing down on you--but you would soon feel it!

c. Use a parked car on the playground or in an isolated area of the parking lot. Have one student sit in the driver's seat. Have the other students walk around the car. The student in the driver's seat should look straight ahead or use the mirrors. He should call out the names of the students whom he can see. How many students can he watch at once? Place a leaf or a small piece of paper on the windshield at or below eye level. Have another student align himself so that the leaf hides him from the driver's vision. How far away is he? How close must he be before the driver can see him clearly?

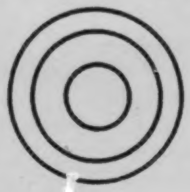
3. "Look at the Bull's Eye." Use master for reproduction #7 on page 43 to demonstrate the concept of focal area.

Variation; This activity can be used in a safety center in the classroom.

4. Peripheral Vision.[3] Ask a child to hold a notebook up to one side of his face, blocking his side vision. Ask him to describe what he can see and to compare what he cannot see to what he could see before. Have another child stand directly in front of the child and then slowly move to the child's blocked vision side. Have the child with the blocked vision signal when he can no longer see the moving child. At that point, the moving child should stop and the child with blocked vision should remove the notebook. Ask the child whose vision was blocked if he can now see the other child without moving his head. Ask the children how peripheral (side) vision is helpful in a traffic environment both for pedestrians and drivers. Have children give examples from their own experiences to illustrate how they have used their side vision to obtain clues about the traffic and environment.

WN MV

Look At The Bulls Eye



You Probably Cannot Identify
The Letters in Each Corner

VN XY

TO GET STARTED

Look directly at the bulls eye. You see it clearly but you cannot identify the characters in each corner, although you know they are there.

Our true focus (central vision) area is not large. We see clearly in a small area only. This is a handicap to safe driving and we must overcome this vision deficiency. We will talk more about how to compensate for this deficiency in a few minutes.

PEDESTRIAN SAFETY - LEVEL C

CONCEPT V: PEDESTRIAN SKILLS - PART C - AUDIO PERCEPTION

OBJECTIVE

After various learning experiences, the student will be able to distinguish audio cues that warn him of danger in the traffic environment.

CONTENT FOR DISCUSSION

Listening is essential for survival in the traffic environment. Students should know and understand the distinction between what they hear and the levels of listening. In fact, awareness of sound is an essential stage of the student's auditory development. They should realize that sounds have both source and meaning. Hearing sounds or words, and being able to discriminate between them should increase the student's ability to listen and form associations that distinguish audio cues that warn him of possible dangers in the traffic environment.

ACTIVITIES

1. Do You Get the Message?[1] On the chalkboard, place the chart below. Discussion follows.

Activity	Purpose	Response
Listening to oral reading of a story. (Select any short selection appealing to your particular group.)	Listen for information	Assimilate details of story
	Listen for enjoyment	React to mood that author creates
	Listen for evaluation	Discriminate between fact and fancy

2. Listening for Information. Have the students give directions for:

    a. Baking a "packaged" cake.
    b. Locating an entry in the dictionary.
    c. Mixing tempera paint.
    d. Playing a game.
    e. Procuring from the library a particular book of fiction.
    f. Summoning the fire department.
    g. Treating a cut finger.
    h. Walking home from school to the nearest public library.

3. Listening for Enjoyment (use of radio or tapes). Discuss and identify the following as examples of hearing or as examples of listening:

    a. Being aware of music (hearing).
    b. Being aware of persons' voices (hearing).
    c. Identifying with characters in a drama (listening).
    d. Objecting to sales pressure in a commercial (listening).
    e. Predicting the outcome of a dramatic presentation (listening).
    f. Enjoying the humor of a joke.

4. Listening for Evaluation

    a. Detecting sales pressure.
    b. Discriminating between fact and opinion.
    c. Consciously interpreting and reacting to traffic sounds.

5. Evaluation Check. Do the students see the relationship between response to listening and purpose for listening? If this evaluation is successful, present the following chart and see if students can interpret it. (Chart on page 45; activity #1 can be used as an alternate).

    Note: These activities (1, 2, 3, 4 and 5) can be used for independent study or for advanced students' and classes.

	Traffic Sounds
Hearing	Mere recognition of the sounds of the moving vehicles
Listening	Reaction to and interpretation of significant sounds -Association of police officer's whistle with the direction of traffic -Identification of screeching tires and honking horns -Realization of the amount of traffic

6. Discussion. Contrast the sounds that were heard with the sounds that demanded the listener's attention.

   a. Why is this especially significant in the traffic environment?
   b. Where is this concept also especially important?
   c. Who is responsible for making this distinction?
   d. When are we trained to have the ability to make this distinction?
   e. What can you do as an individual to improve your ability to distinguish sounds?

7. Mystery Sounds Puzzle. Have the students prepare a cassette tape with "mystery" sounds from the traffic environment. Let them test their classmates for quick identification of the sounds.

PEDESTRIAN SAFETY - LEVEL C

CONCEPT VI: WALKING DURING CONDITIONS OF LIMITED VISIBILITY

OBJECTIVE

The student should know the proper precautions to take while walking in darkness, at dusk, and in rainy weather.

CONTENT FOR DISCUSSION

One of the pedestrian's basic responsibilities to himself and to vehicle drivers is to make himself visible. A pedestrian owes it to himself to see and be seen. When it is dark or rainy, drivers have great difficulty seeing the pedestrian.

After dark, a pedestrian should wear white or some reflective material. It is even better to carry a flashlight.

On rainy days, the pedestrian should wear a bright color; white or yellow is best. On snowy days, he should wear dark clothing so that he will stand out against the white snowy background.

ACTIVITIES

1. Wear-White Demonstration. Tape white, light, and dark pieces of material on black paper. Place the squares of paper at one end of the room and darken the classroom. Shine a flashlight on each sample. Add a square with reflective material. Discuss the results of the experiment. Which square is easier to see? Which do you see "first"? Which do you see "longest"?

2. Crayon-Resist Pictures. Have the students draw crayon pictures of scenes on a rainy day. Have them color some people's clothing with dark colors, some with light colors. Using a dark color of tempera or fingerpaint, cover the entire picture. Who in the picture is easier to see?

3. Light Refraction and Reflective Materials.[1] Why light up at night? The ability of an object to reflect light determines its visibility. Reflection is defined as the return of light waves from a surface. Most objects are diffuse reflectors--light striking them bounces back in all directions. That is why they are hard to see at night. If there is little light to be reflected, diffuse reflectors send the light off in all directions--and not back to the source of the light (such as a headlight of a car). Mirrors reflect light in only one direction; but unless the light source is directly in front of the mirror, the light is reflected away from the source. Retro-reflective material is made of millions of tiny prisms or glass beads. Light striking on one of these beads is focused within the structure and reflected directly back to the source. Use the actual objects mentioned and a flashlight to illustrate this concept. Darken the room. Shine the flashlight on various diffuse reflectors--apples, books, chalkboard. What happens? (We see the object, but not clearly.) What happens to the beam of light? (It "stops" at the object.) Actually the beam of light is broken up and "diffused", the light bounces around and some of it returns to us; otherwise we couldn't see the object in the dark.

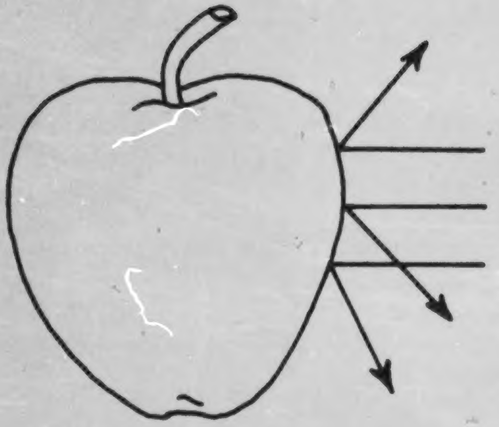
Now shine the flashlight directly into the mirror. What happens to the beam of light? If the beam is strong enough, students sitting exactly perpendicular to the mirror will be able to see the light (as you can see the light from a projector in a movie theater). However, they won't see the light in the mirror. The person directly facing the mirror will be "blinded" by the light, and you'll see the light in that person's face. If you shine the light at an angle, a little dot of light will be spotted on the ceiling or wall on the opposite side of the room. The mirror reflects the light at the same angle at which the light hits it, but sends the light on in the opposite direction.

Now try a piece of retro-reflective material--a "hot dot" or piece of tape. Whatever the angle of the flashlight's beam, the retro-reflective material "lights up." That is because of the material's internal construction. Tiny prisms bend the light, so it returns directly to the light source (and the person holding the light source). Therefore, the material always looks bright and shows up in the dark to the person shining the lights on it.

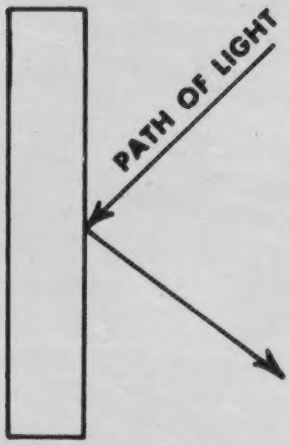
Use the worksheets and diagrams to explain what the students have discovered. Distribute master for reproduction #8 (p. 52) to the students as a study sheet. Have the students note the different ways that light bounces from its surfaces on the types of reflectors illustrated. Using master for reproduction #9 (p. 53), ask the students to draw the different types of reflectors and show the way the material reflects light. Ask: What kind of reflector would you wear at night to make sure drivers see you?

4. Patchwork. Have the students design and make patches, armbands, or waistbands using reflective materials to wear in darkness.

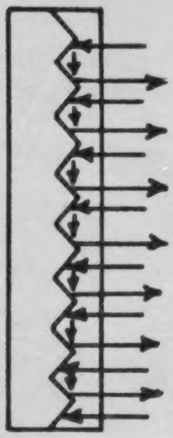
5. Trick or Treat. Near Halloween, discuss the safest kinds of costumes to wear when tricking or treating. Discuss the safest routes to use. Hold a contest for the scariest, prettiest, etc., costumes using reflective materials.



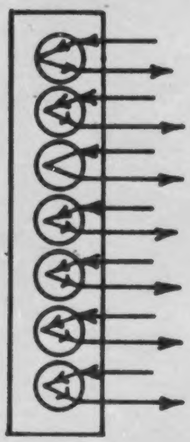
Diffuse Reflector


PATH OF LIGHT

Mirror Reflector



Retro - Reflector Prisms



Retro - Reflector Beads

DRAW THE PATH OF THE LIGHT IF REFLECTED FROM:

Diffuse Reflector

Mirror Reflector

Retro - Reflector

CONCEPT VII: IDENTIFICATION OF PEDESTRIAN HAZARDS

OBJECTIVES

The student should be able to identify or predict certain hazards that a pedestrian faces and explain how to handle or avoid these hazards.

CONTENT FOR DISCUSSION

Approximately 1,000 school age children are killed or injured in pedestrian crashes on North Carolina streets and highways each year. Most of these deaths and injuries are caused by unsafe behavior by the pedestrian. Over half of these casualties result from crossing or entering the road at a point other than at an intersection. Another 15 percent of the casualties result from emerging from between parked cars. The student as a pedestrian should learn to look out for himself in traffic and to be aware of the hazards pertaining to:

1. Not crossing at an intersection.
2. Busy intersections.
3. Cars backing out of driveways or alleys.
4. Walking after dark.
5. Railroad crossings.
6. Walking along construction sites, alleys, empty lots, quarries, or expressways.
7. Strangers offering rides.
8. Auto drivers who do not obey stop signs or other traffic laws.
9. Strange dogs or other pets.
10. Sudden or abrupt movements into traffic.

Most importantly, the student should be constantly on the alert for trouble and should make sure that he has established communications with the driver of a vehicle in his path. That means he should obey traffic rules so that he is predictable in traffic, and he should be sure that he is seen by drivers.

ACTIVITIES

1. Spot the Hazards. Discuss possible hazards for pedestrians. What clues might the pedestrian spot to avoid danger? (Sometimes you hear a car before you see it; sometimes you must be extra careful, especially when bushes block your vision at a corner; and so on). Discuss what to look for and what to do in each case. Draw on the students' experiences in traffic. Have they been involved in a pedestrian accident or a near accident?

2. Safety Stories.[2] Read stories to identify unsafe pedestrian acts. Included at end of the concept unit are "John's Safety Trip," on page 60; and "Shortcut to Eternity - Almost," on page 62.

3. Hazard Map. Obtain prepared maps of the school neighborhood or of the city. Have each student trace his individual route to school, to the store, and to other places where he usually walks. Where are the danger spots? What hazards has the student noticed? Can these hazards be avoided? What special precautions should the student take? Which intersections are guarded (police, school guards, safety patrol)? Which are controlled by traffic signals or stop signs?

4. Do-It-Yourself Hazard Map. Have the students draw their own hazard map. They can survey the areas in which they walk most frequently. Where are the danger spots? (blind alleys, busy intersections, etc.) Plot the safest routes to school, stores, play areas. Use the theme, "Don't depend on anyone but yourself."

5. Class Presentation. Have the students compose a list of safe and unsafe pedestrian areas. Have them observe the younger children at their school. Are the younger children walking safely? Using the list and a hazard map developed from one of the previous activities,

have the students develop a presentation for a class of younger children.

6. Films for Discussion. I'm No Fool as a Pedestrian, Walt Disney Productions, or Easy Steps, Film Loops, Inc.

7. Creative Writing Activity. Have the students write stories illustrating safe and unsafe pedestrian actions. Titles might be "Late for School Again," "Dead Eye Dick," "The Traffic Spotter," "J. Walker Goes to Court."

8. Bulletin Board Map. Have the students make up a giant map of a hypothetical town on the bulletin board. They can draw in as many hazards as they can think of--bushes blocking driveways or intersections; railroad crossings; cars backing from driveways; kids running from behind parked cars, etc. Discuss how a responsible pedestrian avoids dangers. (Leave the bulletin board up; the students can add bicycle hazards when they study them.)

9. Word Search. Find Pedestrian Hazards in master for reproduction #10, on page 58 . Are real hazards as tough as these to spot?

10. City Life - Country Life.[1] Have the students compare and contrast life in the city and life in the country with regard to traffic situations. Have them cite examples of the differences in city (urban) and rural traffic. Urban traffic is slower but involves more volume than rural traffic--more cars, more trucks, more traffic controls, and more pedestrians. Rural traffic is sparcer and moves generally at higher speeds than traffic in town. Stress, however, that there are controlled and uncontrolled intersections in both urban and rural situations. Procedures are the same wherever controls are located.

    Variation: Have the students construct a bulletin board illustrating the differences in city life and country life with regard to traffic situations in the classroom or frequently used hallway in the school.

CIRCLE THE HAZARDS FOR PEDESTRIANS

U	R	R	P	U	V	L	B	D	I	G	E	H	I	K	I	J	T
P	B	E	A	Z	T	K	L	U	A	Y	G	H	F	D	N	H	E
V	O	G	H	I	L	L	S	S	R	G	D	E	C	J	T	J	N
I	X	I	L	R	L	X	L	K	V	Y	I	S	V	W	E	X	O
S	T	U	I	T	N	R	E	G	N	A	R	T	S	B	R	Z	U
I	K	O	N	D	O	Q	O	P	C	W	B	R	A	Y	S	F	T
B	Q	C	E	O	I	G	U	A	V	H	X	W	G	Z	E	C	I
I	G	A	U	C	T	B	V	X	D	G	K	L	Z	R	C	B	U
L	S	B	G	R	A	I	N	I	C	L	F	F	A	R	T	S	F
I	L	D	T	B	T	I	M	Z	S	H	V	C	L	E	I	T	G
T	X	C	A	N	S	M	J	L	U	I	D	E	L	X	O	H	V
Y	A	F	S	O	E	K	A	N	O	E	B	I	E	J	N	Q	K
R	Q	L	M	M	R	M	N	T	K	O	S	I	Y	W	O	P	Q
T	R	A	F	F	I	C	S	R	T	O	R	U	S	V	P	W	H
R	X	Y	K	N	F	Z	A	C	S	Y	A	W	E	V	I	R	D
A	Z	B	A	C	D	P	D	E	I	N	C	O	M	G	N	F	G

These words are used in the puzzle:

stranger
animals
intersection
visibility
alleys

driveways
trucks
bridge
railroad
parked car

ice
fire station
traffic
cars
hills

roads
dusk
rain
highway
traffic

CIRCLE THE HAZARDS FOR PEDESTRIANS

U	R	R	P	U	V	L	B	D	I	G	E	H	I	K	I	J	I
P	B	E	A	Z	T	K	L	U	A	Y	G	H	F	D	N	H	E
V	O	G	H	I	L	L	S	S	R	G	D	E	C	J	T	J	N
I	X	I	L	R	L	X	L	K	V	Y	I	S	V	W	E	X	O
S	T	U	I	T	N	R	E	G	N	A	R	T	S	B	R	Z	U
I	K	O	N	D	O	Q	O	P	C	W	B	R	A	Y	S	F	I
B	Q	C	E	O	I	G	U	A	V	H	X	W	G	Z	E	C	D
I	G	A	U	C	T	B	V	X	D	G	K	L	Z	R	C	B	U
L	S	B	G	R	A	I	N	I	C	I	F	F	A	R	T	S	F
I	L	D	T	B	T	I	M	Z	S	H	V	C	L	E	I	T	G
T	X	C	A	N	S	M	J	L	U	I	D	E	L	X	O	H	V
Y	A	F	S	O	E	K	A	N	O	E	B	I	E	J	N	Q	K
R	Q	L	M	M	R	M	N	T	K	O	S	I	Y	W	O	P	Q
T	R	A	F	F	I	C	S	R	T	O	R	U	S	V	P	W	H
R	X	Y	K	N	F	Z	A	C	S	Y	A	W	E	V	I	R	D
A	Z	B	A	C	D	P	D	E	I	N	C	O	M	G	N	F	G

These words are used in the puzzle:

stranger
animals
intersection
visibility
alleys

driveways
trucks
bridge
railroad
parked car

ice
fire station
traffic
cars
hills

roads
dusk
rain
highway
traffic

JOHN'S SAFETY TRIP

John told the following story to his mother:

"Hi, Mom. Did you hear what happened at school today?

"Well, you heard about John Stone's trip to school last week. He was feeling a little important, because he had been chosen to tell the kindergarteners about our safety patrol.

"John forgot to set his alarm clock in excitement so he was a little late getting started. He was in such a hurry that he didn't even bother to look out the window or listen to the weather forecast on the radio. It was raining and a little cold, but John put on the first clothes he saw and didn't even think about a bright, warm jacket.

"John came to school a mess. He had a purple plaid shirt with an orange sweater and green-striped pants. He had one blue and one gold sock. He put on his spring jacket which is navy blue. He rushed out of the house without even saying good-bye to his mother or eating a bite of breakfast.

"On his way to school, John didn't take the usual route. He didn't always use the sidewalks or intersections with safety patrols. He didn't notice the Kingston's 'Beware of Dog' sign and climbed right over the fence, only to see their German shepherd nip at the bottom of his pants. You should have seen them!

"In the Walk's yard, John was running so fast he didn't see the hole Mr. Walk had dug for a new tree. John tripped, and the front of his pants were all wet and muddy.

"Onward John trudged, though. He jaywalked and walked in the middle of the street. Of course, in the gray, rainy weather with a navy blue jacket, many of the oncoming cars didn't see him until they were right on top of him, and if they hadn't been going slower and been extra careful because of the slick roads, it might have been too late for John.

"Of course, John was wet and cold, too. He was in such a hurry that

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School Safety, the National Safety Council, March-April 1968.

he didn't even notice one of his classmates, a safety patrol, signaling to stop, and ran right in front of a car without even stopping to look. The car slammed on its brakes and skidded; but luckily, when John slipped because he was running across a slick street, he slipped to the left of the car's path.

"Well, John finally got to school. He was such a mess that the nurse sent him home to change clothes. Unfortunately, by this time he was sniffing, so his mother decided to keep him home, and he didn't get to give his talk anyway.

"We wouldn't know all these things except that Mr. Jenks, a policeman, was the driver of the car which almost hit John. He contacted Mr. Jones, the principal, and Mr. Jones decided to talk to John when he came back to school a few days later.

"As a result of John's carelessness, the school is stressing safety much more. Mr. Jenks came to school and talked to all the classes in an assembly. He stressed how important it is to be a careful pedestrian, and that we can't always trust motorists or the other guy.

"The school body also decided to have a safety committee. You'll never guess who was chosen chairman, mother."

"Oh, yes I can," answered mother. "Mrs. Smith, the chairman of the PTA Safety Committee, told me the same story and how John was chosen as chairman of the student safety committee."

"Oh, well. You weren't really guessing."

SHORTCUT TO ETERNITY - ALMOST!

by Ken Beachy

I will always remember a sunny July day last year and my experience on a train trestle.

Steve, my best friend, and I had been planning a fishing trip for several weeks. We were real fishing nuts, and we had new racing bicycles. So at 7 a.m. we excitedly set out for our first fishing trip alone.

Our destination was the Sandy River east of Portland. We had fished the Sandy often with our folks and were familiar with the entire area. We reached Troutdale, a small town located on the river, about 8:30. When we turned down a path along the river's edge, we were disappointed to see a long sandbar about 30 centimeters (12 inches) beneath the water's surface. It extended perhaps 30 meters (100 feet) from the bank. The summer dry spell had made our side of the river no good for fishing, but the other side looked like it would be deeper near the bank.

How to get across was a problem because the nearest bridge was at least a mile away and we were anxious to start fishing.

Then we remembered the nearby railroad trestle. It would make a fast shortcut for us, we thought.

When we were about a quarter of the way across, wheeling our bikes, newspaper stories of car-train wrecks at railroad crossings began to flash through my mind. I then thought of what could happen to us on that trestle if a train should come along.

I wasn't too worried, though--at that time I didn't realize we were on the main rail line going east from Portland.

I took a few steps, but I couldn't shake the uneasy feeling. So I stopped and talked Steve into turning back. It wasn't hard to do; he too had a few qualms about what we were doing. We turned our bikes around and were soon back on the river bank

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School Safety, the National Safety Council, March-April 1968.

Just a minute later, a huge Union Pacific Domeliner roared down the track and across the trestle. Steve and I looked at each other, realizing that if we had gone on across instead of turning back when we did we would have been finished.

And I wouldn't be telling this story. Walking trestles is fun, but it certainly can be dangerous--what looks like a little spur track might well be a main rail line.

Shortly after the train passed, two shaky boys pedaled over to the bridge. It was a mile we didn't mind traveling now. We had learned the easy way that there is no shortcut in safety.

CONCEPT VIII: TRAFFIC SIGNS AND SIGNALS

OBJECTIVE

The student should be able to identify all major traffic signs, signals, and markings and explain his responsibility as a pedestrian in relation to them.

CONTENT FOR DISCUSSION

A new system of highway signs, signals, and markings is being instituted throughout the United States and the world. The new system uses symbols, colors, and shapes to convey traffic messages simply and uniformly. A visitor from France or Japan will recognize the signs because these signs are the same throughout the world.

The different colors and meanings are

Red - stop or no,
Green - directional information,
Yellow - warning,
Blue - services for motorists,
Orange - roadwork ahead,
White - regulatory,
Brown - parks and recreation,
Mixed - specific signs, such as TRAFFIC SIGNAL AHEAD.

Two basic symbols to know are the red circle and line which mean no and are used with other symbols, and the arrow and island which indicate the direction of traffic flow. Other symbols give information through pictures.

Shapes are dealt with in the masters for reproduction #11-#18, pages 69-76. Pedestrians should know all traffic signs so that they know what they are supposed to do and what the cars are to do. Know the signs that a pedestrian must obey: PED X-ING, crosswalk patterns, traffic lights. Pedestrians have the right-of-way in crosswalks, but nowhere else.

Cross only on the green light facing you. Stop on red; wait on yellow. Always look and listen before you cross. Remember, vehicles can turn right on red in North Carolina. Always check to your left around the corner before crossing.

ACTIVITIES

1. Shape Up.[2] Use masters for reproduction #11-#18, pages 69-76, to identify the meanings of shapes. Have the students color the shapes and add symbols and words. Discuss why a pedestrian needs to know the signs. (He needs to know some in order to know what to do and some to know what he can expect cars to do. Someday he will be driving and will need to know).

   Variation: Teachers may ask students to draw their own shapes of the signs as an art activity, without using masters for reproduction.

2. Traffic Engineers. Turn the classroom or the school into a mock traffic situation. Have the children analyze the traffic flow. Where would markings or signs be needed most? Put up signs and markings which the students must obey.

3. Creative Writing Activity. Have the students make up riddles, rhymes, or limericks to help remember the signs, signals, and markings.

4. Sign Bingo. Using the pamphlets available on traffic signs, have each student construct one or more bingo-type cards by cutting and pasting the signs into a grid. Make markers by gluing an individual sign to a small piece of cardboard. Draw a sign and call out its meaning. To win, a student must have a straight line covered and must correctly identify all the signs under the beans (or markers).

5. Step and Stop (musical chair-type game). Place large traffic signs from kit in a large circle on the floor. Make 6 to 8

duplicates of the STOP sign on red construction paper and intersperse the extra signs in the circles. To begin, each student stands on or near one of the signs. The teacher uses a record for music. Students march to music and claim a sign when the music stops. STOP signs are free areas where no questions are asked. If a student lands on a sign other than STOP, he must give the meaning of the sign. Any child unable to define his sign is asked to sit down, and one of the free STOP signs is removed. Those left standing when all STOP signs are removed are declared winners. Note: Game may be adjusted to any number playing as long as each child has a sign. Game may be more difficult by eliminating the STOP signs or by requiring the student to give a situation or location where he might see the sign.

7. Spinner Sign Game.[2] Take a poster size piece of cardboard and glue replicas of signs in a circle. Attach a spinner cut from cardboard with a tack or paper fastener. Whirl the spinner and have the student identify the sign to which the spinner points.

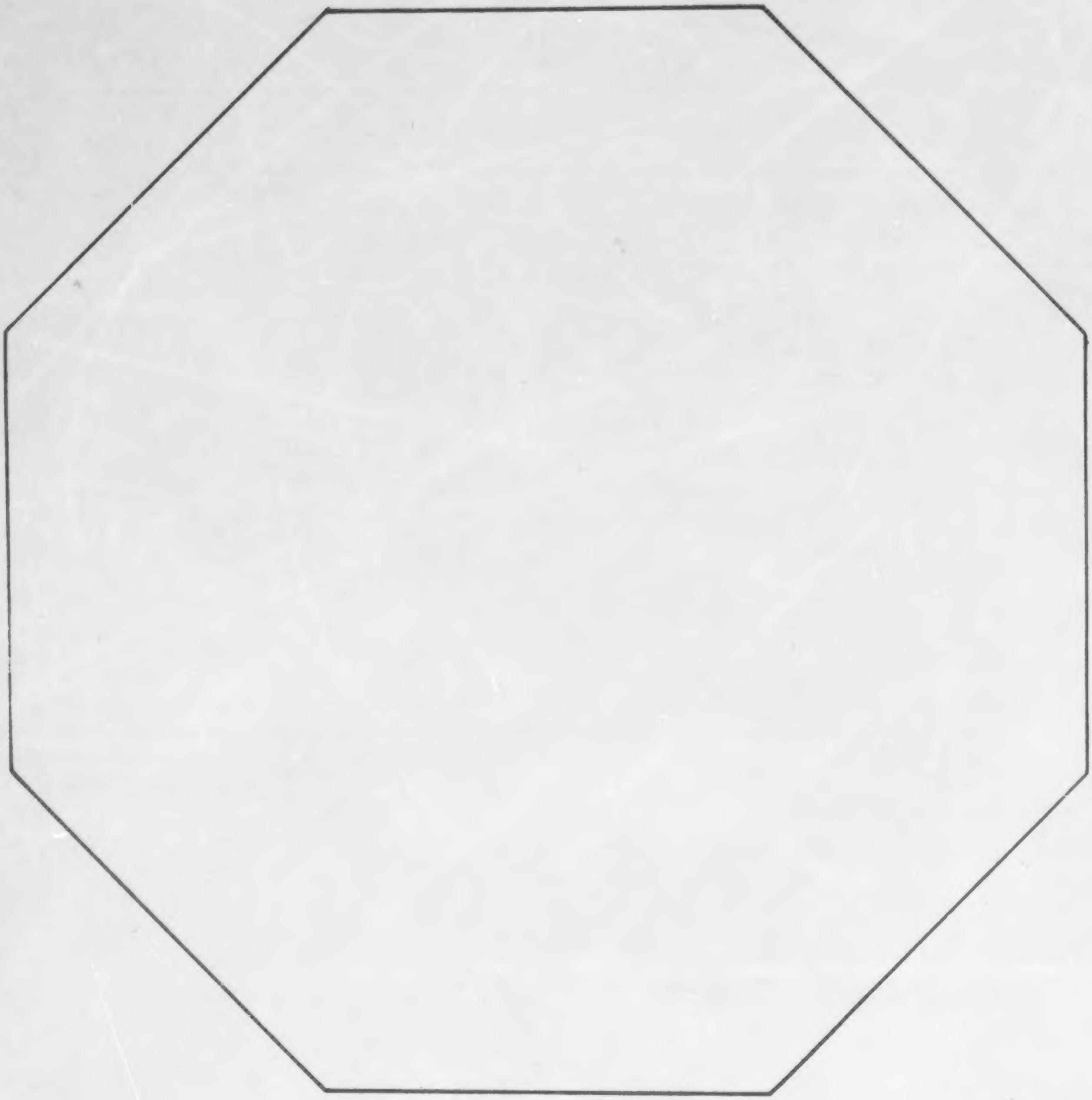
8. Sign Trip. Divide the children into small groups. Have them plan a short trip using the State map. In a presentation to the class, one student can narrate the trip, noting especially places where traffic signs might be found. Another student can draw the shape of the sign on the board and have the class guess what the signs say.

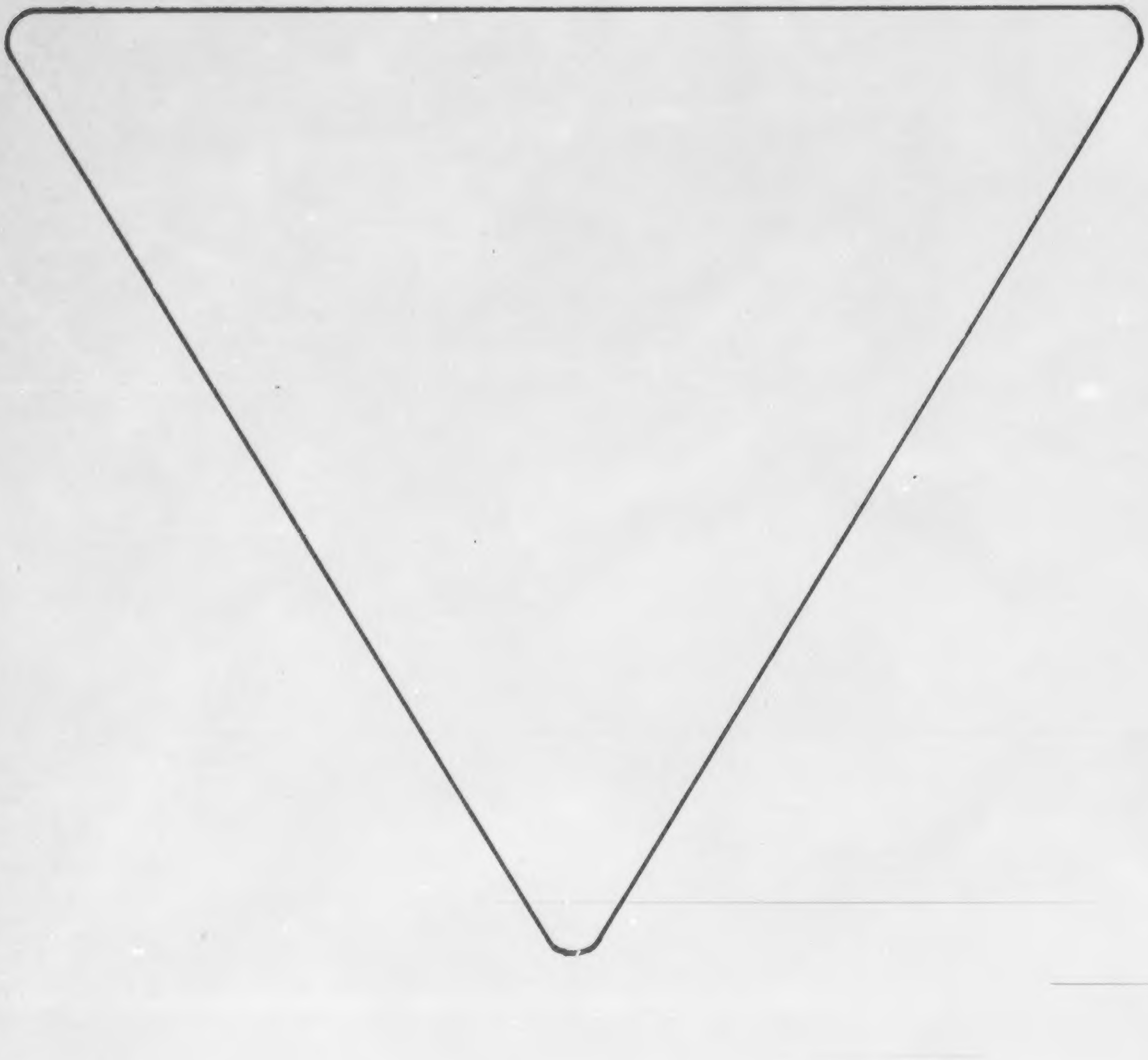
9. Art Activity. Have the student construct mobiles or make collages using traffic signs.

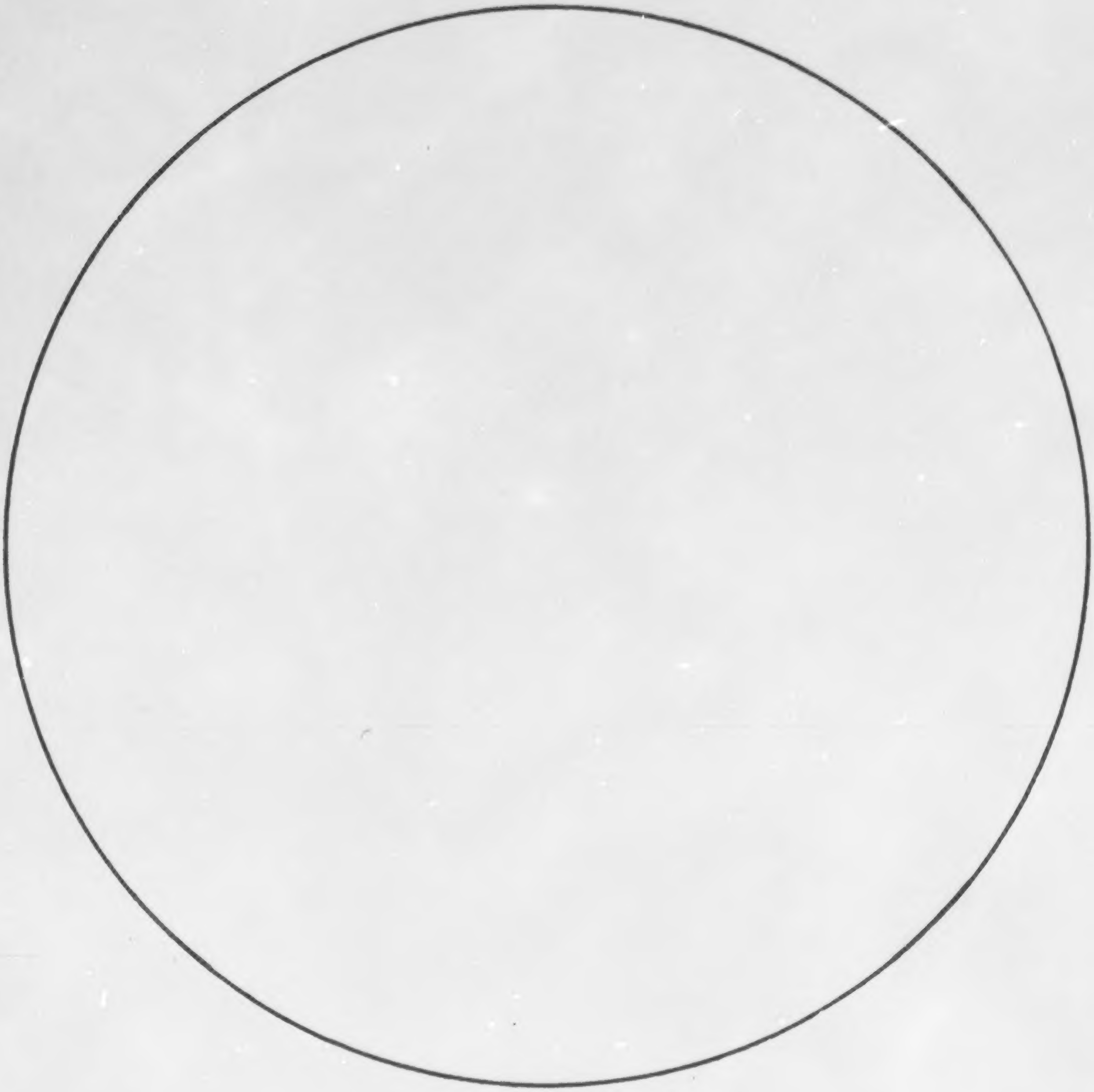
10. Pavement Markings. Use master for reproduction #19 (page 77) "Yellow and White Pavement Markings." Discuss pavement markings. Using the master as a transparency, either color in the appropriate yellow lines with a grease pencil or distribute them to the class and have them color in the correct markings.

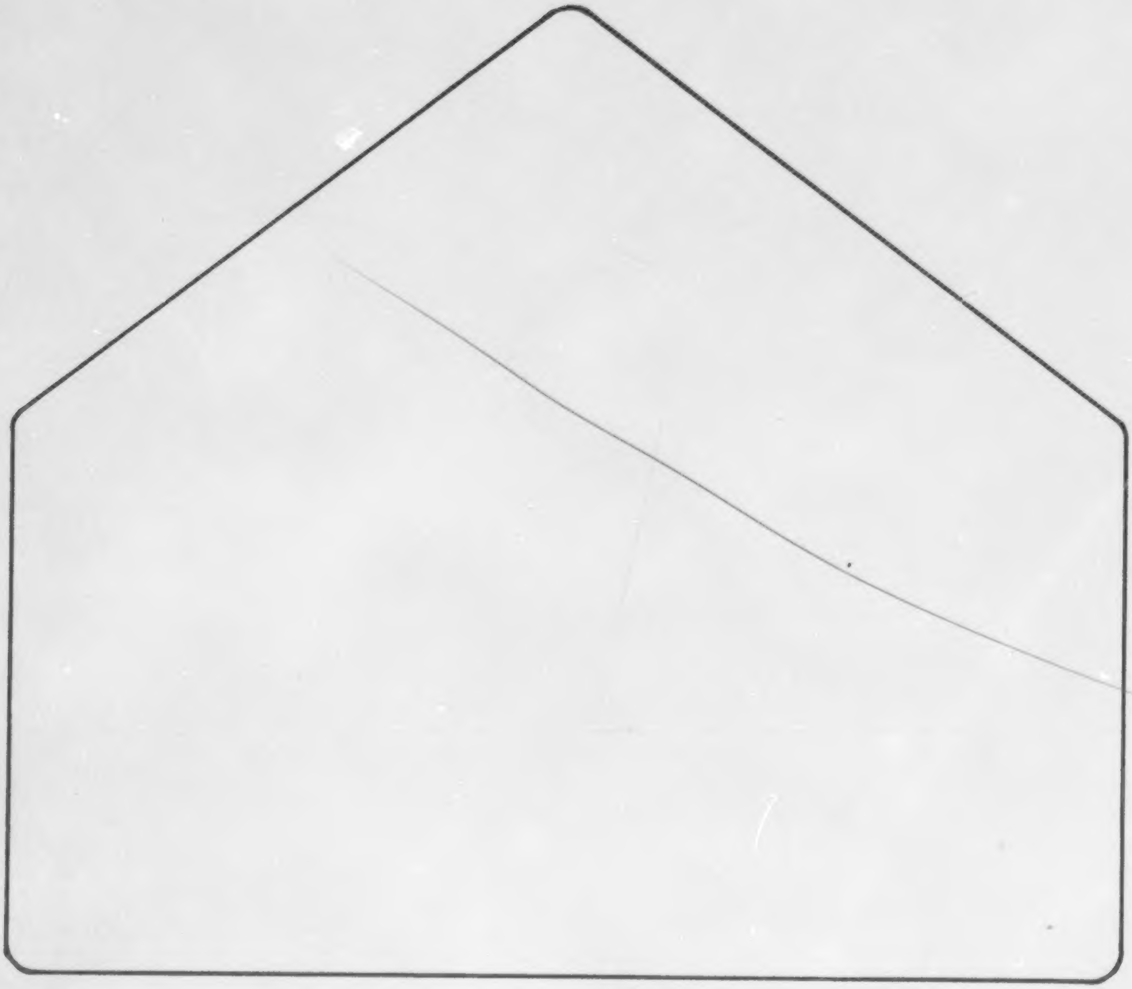
11. Game Time. Have the students develop their own card game using traffic signs and markings.

12. My School Route Survey. Use master for reproduction #20 (page 78) "My School Route Survey."[1] In a discussion of safety rules they use to and from school, elicit from students the rules that apply to them in their own route. Some children will not be using all pedestrian rules because they may not cross a traffic light.

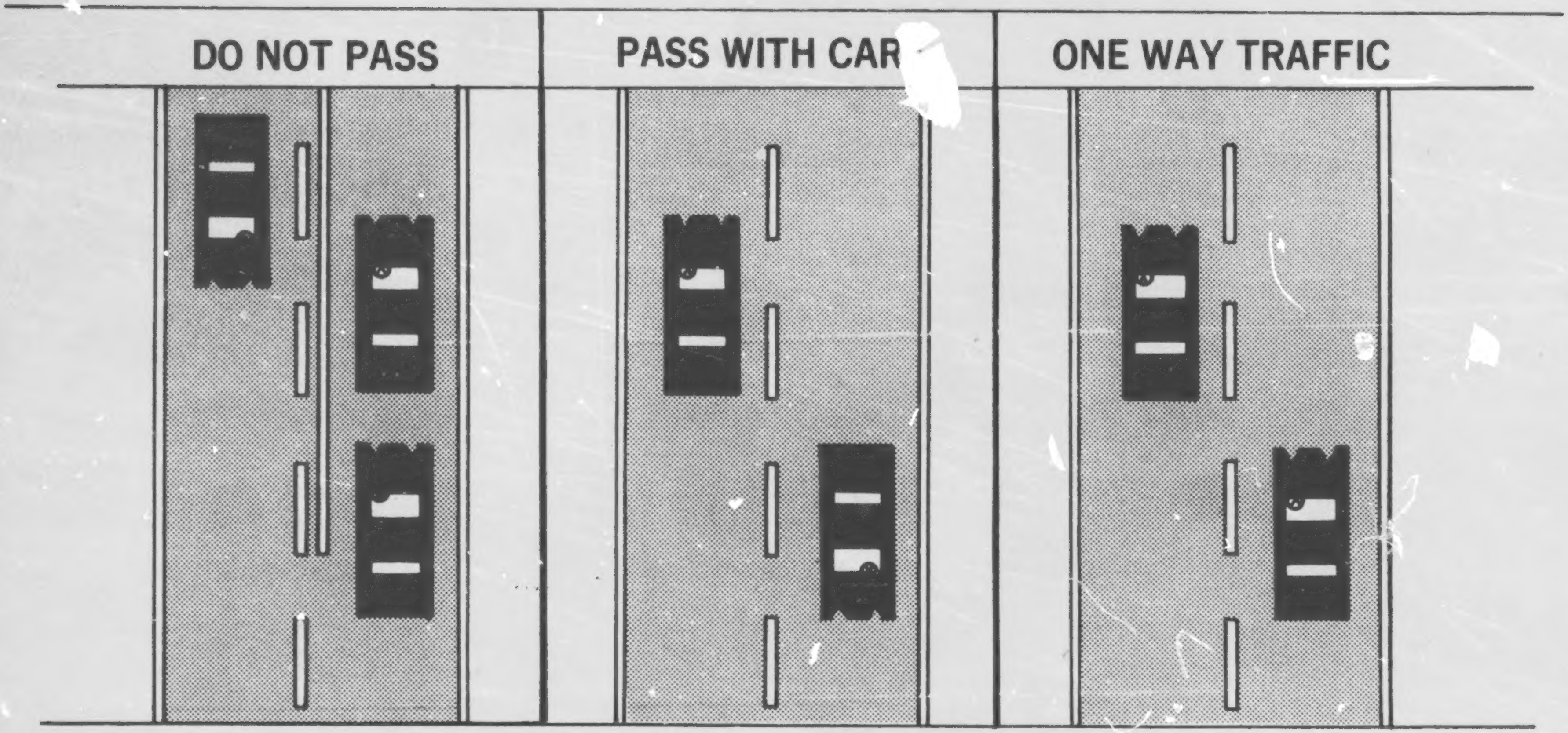








PAVEMENT MARKINGS


DO NOT PASS
PASS WITH CAR
ONE WAY TRAFFIC

MY SCHOOL ROUTE SURVEY

Name ______________________ Address ______________________

____

1. HOW MANY CORNERS DO YOU CROSS ON THE WAY TO SCHOOL? ________
2. HOW MANY OF THE CORNERS THAT YOU CROSS ON THE WAY TO SCHOOL HAVE TRAFFIC SIGNAL LIGHTS? ________
3. HOW MANY CORNERS THAT YOU CROSS ON THE WAY TO SCHOOL HAVE WORD SIGNALS? ________
4. HOW MANY CORNERS THAT YOU CROSS ON THE WAY TO SCHOOL HAVE NO SIGNALS AT ALL? ________
5. HAVE MANY OF THE CORNERS THAT YOU CROSS ON THE WAY TO SCHOOL HAVE
   SCHOOL CROSSING GUARDS? ________
   POLICEMEN? ________
   SCHOOL SAFETY PATROL PERSONS? ________
6. HOW DO YOU GET TO SCHOOL?
   SCHOOL BUS ________
   WALK ________
   CAR POOL ________
7. IF YOU HAD YOUR CHOICE WHICH WAY WOULD YOU PREFER TO GET TO SCHOOL EVERYDAY?
   SCHOOL BUS ________
   WALK ________
   CAR ________

CONCEPT IX: PEDESTRIAN RESPONSIBILITY

OBJECTIVE

The student should be able to list or demonstrate the obligations that a pedestrian has under the law and to himself.

CONTENT FOR DISCUSSION

There are two basic rules that a pedestrian should always practice. The first is to be responsible for himself in traffic and the second is to establish communication with the drivers of vehicles. The safe, responsible pedestrian is always seen and is always seeing. He scans the traffic scene for danger and relies on himself to avoid hazards. He is always predicting and thinking defensively. The safe pedestrian is predictable. He obeys the rules and makes sure vehicle drivers see him. He does not make unexpected movements in traffic like darting out from between parked cars. More specifically, the safe and responsible pedestrian rules are:

1. Always take the safest route to school, playground, or other places.
2. Always walk on the sidewalk. If there is no sidewalk, walk on the left side of the road (not on the road) facing traffic and leave the road shoulder when a car is coming.
3. Walk on the sidewalk safely and courteously. Walk on the right and consider the safety of others.
4. Use guarded crossings whenever possible.
5. When you cross a street without a guard, cross at the corner. Always obey the light. Scan four ways when you cross the street. Look to your left for turning cars; look for approaching cars on the street to the left, straight ahead, and to your right. Look back to your left again. If the way is clear, proceed across the street. Walk, do not run across a street. Do not dawdle--just walk briskly across.
6. Always be on the lookout for cars that might not see you.

7. Stay within the crosswalks.
8. Never step from behind a parked car.
9. Be on the alert in bad weather. Wear brightly colored clothes. Walk carefully and allow extra time so you don't have to rush.
10. At night, make sure drivers can see you. Wear white or a reflective material, or carry a light.
11. Never steal rides on cars or trucks.
12. Do not hitchhike; it is dangerous.
13. If you are in a rural area where no intersection is close, exercise extreme caution when crossing a highway.

ACTIVITIES

1. Student Lawmakers.[2] Have the students make up a list of safe pedestrian rules. Compare their lists with the list in the N. C. Pedestrian Code (on page 85).

2. Card Game. Prepare cards with a key safety word on each card--such as red, crosswalk, left, right, white, yellow, reflective, parked cars, rainy, etc. Rules: Draw a card. Use the word on the card in a pedestrian safety rule. Score one point for each correct rule. Score another point for each additional rule using the same word. For example, if you draw the word "white," you might say: (1) Wear white at night. (2) Always cross the street within the white pavement markings. Score two points.

3. Finish the Story, "That Kind of a Day."[2,5] All children, and many adults, have giggly days. Often they are a release of tension or a reaction to boredom. Giggly days can be safe emotional outlets if they do not get out of hand and if the giggles are channeled in constructive ways.

   In this story, the gigglers run amuck until a cliffhanger climax is reached. But the end of the story is not simply whether or not the children are struck by the car. The end should include the youngsters' realizations of the behavior that put them in the dangerous situation.

Have your class write their own versions of the end of this story. Then after that, have a class discussion about horseplay and the trouble it can lead to for everyone involved. The story is at the end of this concept (page 76).

4. "The Mystery of the Kissed Schnauzer."[2,5] In introducing the story (page 88-94) to the class, the teacher should emphasize that there is a mystery involved and that the child is required to recognize the clues necessary for its solution. The story may be read independently, or it may be presented orally by the teacher or by selected readers from the class. At the conclusion of the reading, the children should be given time to look back through the story, find the clues called for, and list them on paper. Added interest might be obtained by dividing the class into groups of four to six and seeing which group can solve the mystery first. A discussion period should follow the solution.

   Clues in "The Mystery of the Kissed Schnauzer": The boy who found Packy committed five safety violations in getting him to the D-X station. That meant that the boy had to be from Lincoln School, where safety was not taught in the fourth grade. Fourth graders from Mark Twain had studied safety and would have avoided these foolish mistakes. The safety violations made by the boy were:

   a. Crossing in the middle of the block (jaywalking).
   b. Walking on the right side of a road without sidewalks, instead of walking on the left.
   c. Crossing an intersection when the light said "don't walk."
   d. Standing in the gutter (instead of on the sidewalk) to wait for cars to pass.
   e. Riding as a passenger on the handlebars of a bicycle.

5. Situation Analysis.[2] Use masters for reproduction #21-#26 (pages 95-100). Mount them on large index cards, matching the diagram for card 1 to the information sheet for card 1. Divide the class into small groups. Give each group a card which illustrates a traffic pedestrian or traffic-bicyclist situation sketch and a brief description of the situation.

Each group should meet and discuss:

a. Are there any dangers present?
b. What safety rules are being broken?
c. What corrections can be made?

Each group elects a spokesman or, if desired, a panel discussion could be formed to discuss the problem situation of each group. The discussion leader projects the sketch on an overhead projector or uses slides as he reports the findings of his group. At the close of the presentation, the class offers additional suggestions to help correct the situations. A set of basic safety rules will have evolved and should be recorded by the group. (Teacher may want to use this activity in a classroom simulation at a traffic court.)

6. Guest Speaker. Invite a policeman to school to speak to the class about pedestrian rules and laws. Note: Ask the policeman to leave his gun, club, etc., at the office, since students are easily distracted by such equipment.

7. Traffic Court.[1] Through a discussion of ways to discourage traffic violations, the teacher may introduce the idea of traffic courts: "What is a traffic court? Why do we need them? What purpose do they serve? Who goes to traffic court? Let's describe the people involved in a court situation." The students should be familiar with the roles of the judge, the jurors, the witnesses, and the defendents. If there are some students who are not sure of the roles these people play, the teacher can write the names on a chart and discuss each one. The teacher may also introduce the role of bailiff to the class.

Introduce the activity by saying: "We would like to hold traffic court in our room. However, we will have to have traffic cases to bring to court. Why do people come to court?" The teacher can elicit from the students the idea that the people violated a traffic rule: "Let's list some broken pedestrian rules that can endanger us." The teacher may use chart paper or poster board to list the rules the children give. Some of the rules that are usually given are the following:

a. Look both ways before crossing the street.
b. Walk--don't run across the street.
c. Cross only at corners.
d. Don't play near the street.
e. Obey the patrols, crossing guards, and traffic lights.
f. Do not act foolishly when you are crossing a street.

After the class has composed the list of pedestrian rules, encourage the students to write descriptions of hypothetical situations involving a violation of traffic rules that leads to an accident and that is controversial enough to be brought before a court as a traffic case. This part of the lesson can be done on the first day.

8. Role-Playing in Mock Traffic Court.[1] This is role-playing at its best. The children not only portray the individual's role in court but also gain a valuable lesson in courtroom procedures. (Refer to activity #7 for additional information.)

After the children have submitted their hypothetical traffic situations, the cases are placed on the judge's bench. The teacher may select the student participants in any way she desires.

The "bailiff" calls the court to session, introduces the judge, and requests the court to rise. The "judge" enters, asks the court to be seated, and proceeds to read the case for the day. He then reads one of the stories. The teacher may have to help the class interpret the situation. She may then write a few brief facts on the board so that the class understands who is being brought to court and why.

The students may now really put themselves into the roles that they are portraying. The prosecuting attorney can call his witnesses and appeal to the jury. The defense attorney can plead his case. Encourage "lawyers" to use specific rules in quoting violations. The model intersection is used by the witnesses to reenact what took place.

The case finally goes to the "jury." These students decide the verdict, but they must support this verdict with valid ideas.

N. C. PEDESTRIAN CODE

1. Always take the safest route to school, playground, or other places.
2. Always walk on the sidewalk. If there is no sidewalk, walk on the left side of the road (not on the road) facing traffic, and leave the road shoulder when a car is coming.
3. Walk on the sidewalk safely and courteously. Walk on the right and consider the safety of others.
4. Use guarded crossings whenever possible.
5. When you cross a street without a guard, cross at the corner. Always obey the light. Scan four ways when you cross the street. Look to your left for turning cars, and look for approaching cars on the street to the left, straight ahead, and to your right. Look back to your left again. If the way is clear, proceed across the street. Walk; don't run across a street. Don't dawdle--just walk briskly across.
6. Always be on the lookout for cars that might not see you.
7. Stay within the crosswalks.
8. Never step from behind a parked car.
9. Be on the alert in bad weather. Wear brightly colored clothes. Walk carefully and allow extra time so you don't have to rush.
10. At night, make sure drivers can see you. Wear white or a reflective material or carry a light.
11. Never steal rides on cars or trucks.
12. Don't hitchhike. It is dangerous.
13. If you are in a rural area where no intersection is close, exercise extreme caution when crossing a highway.

THAT KIND OF A DAY

It was that kind of day. A giggly day! Just about anything anybody did or said seemed funny. It had started during first period math class when Larry got his words twisted trying to explain how he worked out a problem. The rest of the class did their best to keep the snickers quiet.

That's the way it was throughout the school day. And then everybody let loose with laughter afer school when Billy Harkins yelled at a surprised patrol boy, "Look out for the motorcycle!" The boy jumped and was angry when he discovered the only thirg menacing him was a tail-wagging puppy bouncing toward him.

Billy took off running, as did his friend Larry and the twins, Sharon and Karen, who were walking with the boys.

When Billy tripped over a bush, they all laughed so hard they had tears streaming down their faces.

Of course, it was not exactly an accident. Larry had purposely distracted Billy's attention for a second, and that was all it took.

Billy jumped to his feet and started after Larry. As he did so, he brushed the twins and knocked the books from Karen's arms.

When Billy finally caught up with Larry, they playfully sparred around until they noticed Sharon helping Karen pick up and dry off her books, which had fallen into a big puddle of water. The boys roared. It was a funny sight to them.

The twins, however, didn't see the humor in the situation. But when the boys volunteered to carry the two girls' books the rest of the way home, the smiles returned to their faces.

It was happy time again.

It was, that is, until Billy and Larry started playing catch with Sharon's geography book.

School Safety magazine published by the National Safety Council.

"Hey, cut it out!" she pleaded.

"We won't hurt it." Billy laughed as he said it.

"Much!" Larry added.

With that, Larry tossed the book high and hard over Billy's head. It landed on the roof of a car parked at the nearby curb, slid across and dropped off into the street.

Karen started toward the spot where the book had landed, hoping she could beat Larry who was also racing toward the book. Sharon, too, made a dash for the book thinking she might retrieve it before Larry could snatch it up and continue teasing her twin sister, Karen.

Billy had fallen when he leaped to try to reach the book as it sailed over his head. He had twisted his ankle and was out of the race for the book. As he raised up on his elbows, he glimpsed a speeding car bearing down on the spot where the book lay in the street.

THE MYSTERY OF THE KISSED SCHNAUZER

Here is a mystery story that will test your ability as a detective. There are five clues that lead Tony Piper to make the decision he does. When you have finished reading the story, see if you know what the five clues are.

Little Sid was a good kid--for four years old. There was only one thing, he liked to kiss dogs.

"He's kissing that dog!" Harry Blakely said aghast to Tony Piper.

Little Sid stopped kissing and stood up. He was about as tall as a yardstick. "I'm not either!" he bellowed. Little Sid had a terrible temper.

"He was!" Harry said to Tony.

Tony didn't want to talk about it. He was ten years old, and sometimes his little brother embarrassed him to tears.

"We're going," Tony told little Sid. "You look after Packy."

"Okay," Sid said. He reached down and fumbled at the curly gray schnauzer's collar.

"What are you doing?" Tony asked him.

"He's getting ready to kiss him again," Harry said. Harry was ten years old too. He and Tony were both in fourth grade, but at different schools. Tony went to Mark Twain. Harry went to Lincoln.

"I'm not either kissing him!" Little Sid straightened up, his eyes blazing.

"What were you doing then?" Harry demanded.

"His collar's too tight," Sid said.

"You leave his collar alone," Tony ordered. "You loosen it, and he'll slip out."

"He won't either!"

"What do you want to keep him tied up for anyway?" Harry asked Tony. "Dogs don't like to be tied up."

School Safety, the National Safety Council, May-June 1967.

"We just got him," Tony said. "He has to be tied up a few days so he gets used to the place."

"You better not say I'm kissing him again either!" little Sid warned Harry.

"Come on, let's go," Tony said. He started away and Harry followed. "Don't you let him get loose," Tony warned Sid the last thing just before walking off.

"Shut up!" little Sid told him. He knelt and started working at Packy's collar again. Tony never in all his life had won an argument with little Sid.

It would be too bad if Packy got loose. It was the "dog days" of midsummer, and too many strays were running around the way it was. They had to be picked up. A little girl had been bitten and was taking painful rabies shots. All the fourth graders in Tony's cub scout pack were going around over town bringing in whatever strays they could find. Harry and he were working together. They were to take any stray dogs they came across to the D-X station on the corner of Lee and Higgins Road. Mr. Kelly, the scoutmaster, was going to be there with a truck up until three o'clock that afternoon.

"Where should we go first?" Harry wanted to know.

"Just walk around," Tony told him. "Any time we see a dog, we'll find out if he's got a collar. If he hasn't, then he's a stray."

"Alleys!" Harry said. "Stray dogs like alleys!" He started across the street walking diagonally toward the entrance to an alley.

"Hey!" Tony yelled. "You're jaywalking!"

Harry stopped in the gutter and turned around to look at him. "So what?"

"Now you're standing in the gutter instead of on the sidewalk!"

"What's the difference?" Harry asked.

"Don't you have anything about safety at Lincoln?"

"We have safety next year," Harry said. "This year we had health."

"Well, it's not healthy standing in gutters," Tony told him. "A car might hit you."

Harry stepped back up onto the sidewalk.

"Doesn't anyone in your school have safety?" Tony asked.

"In fifth grade we do," Harry said.

"We have it all the way through," Tony said. "That shows Mark Twain is a better school than Lincoln."

"Yeah?" Harry said. "Then how come our fourth grade beat your fourth grade in softball?"

That was another one of the things Tony didn't like to talk about. "Come on," he said. "Let's go up to the corner and cross. Then we'll come back down on the other side and go through that alley."

The alley had lots of interesting things--back doors, trash cans, a few stray cats even--but no dogs. They tried another one and then another. They had just entered their fourth alley when they saw little Sid running toward them from the other end. He was crying.

"Packy got loose!" he yelled when he came up to them.

"You let him slip his collar off!" Tony accused sternly.

"I didn't let him!" little Sid defended himself. "He just did it!"

"You go back home," Tony ordered. "We'll look for him."

"You better find him too!" little Sid said. "And I'm going to kiss him! I don't care what anyone says!"

"I told you your little brother kisses dogs," Harry told Tony.

"I don't either!" little Sid shouted. He picked up a rock and threw it at Harry. Harry ducked just in time.

Little Sid went home, and Tony and Harry went all the way from Bridgeport Street to St. Clair looking across backyards and into all the alleys. There was no sign of Packy. Tony was beginning to get worried. What if one of the other cub scouts out looking for dogs found Packy running around with no collar? He would think he was a stray!

"We'll have to start asking people if they've seen a little gray schnauzer," Tony told Harry.

The first person he asked was an old man sitting on a bench at a bus stop.

"A gray schnauzer?" the old man said. "Let's see now, is that the one that's long and has little short legs?"

"No, that's a dachshund," Tony told him.

"Oh, yeow," the old man said, "I used to have a dachshund, They're real smart dogs. Did you ever see a dog that liked peanuts?"

When Tony asked a woman sweeping her sidewalk if she had seen a little gray schnauzer, the woman said: "You boys look hot. Are you?"

"Yes, ma'am," Tony said. "But have you seen a little gray schnauzer go past here?"

"That's a dog," Harry put in as if he were afraid the woman wouldn't know what they were talking about.

"You have to be careful in this heat," the woman said. "You can get sunstroke without even knowing it. I have a little niece in Kansas that got sunstroke once."

"I guess you didn't see a little gray schnauzer then, huh?" Tony didn't want to be impolite, but he didn't have time to talk to the woman about her niece in Kansas.

"She keeled right over on the sidewalk," the woman said. "Playing hopscotch. That hopscotch is a real roughhouse game if you ask me! I hope you boys never play hopscotch! Do you?"

"No, ma'am," Tony said. "We have to be going now."

A block down the street, they met Mrs. Andrews, the Pipers' next-door neighbor, walking along with a sack of groceries in her arms.

"You didn't give Packy away, did you, Tony?" she asked.

Tony said, "No, what makes you think I gave him away?"

"I saw a boy leading him along on a leash a while ago," Mrs. Andrews said.

"Are you sure it was Packy? Who was the boy? How long ago? Which way were they going?" Tony asked.

"It was about thirty minutes ago when I was on my way to the store," Mrs. Andrews said. "I didn't know the boy, but it was Packy all right.

They crossed the street right here. I was as close to them as I am to you now. The boy looked like he was about nine or ten years old."

"They crossed here?" Tony asked. "They were in the middle of a block. That would be jaywalking!"

"I know," Mrs. Andrews said. "But here's where they crossed."

The next person who had seen a boy leading a gray schnauzer was a delivery boy unloading flowers from a panel truck. "I saw a boy leading a little gray dog out on Potter Road," the delivery boy said.

"Potter Road doesn't have any sidewalks!" Tony hoped the boy was mistaken.

But the delivery boy was positive. "They were walking on the south side of the pavement going east," he said.

"That would be the right side! The same direction cars go!"

The delivery boy nodded. "It was a real cute little dog," he said. "I hope you find him."

There was a policeman standing in front of Breezewald's Supermarket in the Lockhurst Shopping Center.

"Yeah, I saw a kid going along here leading a dog," he told Tony. "I'd have given him a talking to if I hadn't been busy with a bent fender out in the parking lot. He crossed against a 'DON'T WALK' sign on the other end of the block, and when he got up here he was in such a hurry he stood in the gutter waiting for the cars to get past."

"Which way was he going?" Tony asked.

"East."

"Thanks. What time is it?"

"Two-thirty."

"He's heading for Lee and Higgins," Tony told Harry, "where Mr. Kelly is waiting with the truck. He thinks Packy's a stray!"

"We better hurry," Harry said. "It's a long way to Lee and Higgins."

They found one other person who had seen Packy and the boy who had him.

"There was a kid with a dog got on a bicycle with another kid," a man told them. "He was sitting on the handlebars with the dog in his arms."

"Which way were they going?"

"East."

"We'll never make it in time," Harry said. "It's nearly three o'clock now. It'll be nearly three-thirty by the time we get all the way out to Lee and Higgins Road. Packy will be gone in the truck."

Tony saw a public telephone booth on the next street corner. "We'll telephone the D-X station," he told Harry. "They can get Mr. Kelly in so I can talk to him."

The man that answered the phone in the D-X station said that Mr. Kelly was out in front and he would get him. Less than a minute later, Mr. Kelly's voice came over the line to Tony's ear.

"This is Tony Piper, Mr. Kelly," Tony said. "Did some boy come in there with a little gray schnauzer?"

"Yes," Mr. Kelly said.

"Hold him! He's mine!" Tony said.

"Which one?" Mr. Kelly asked. "We've got two."

"Two?" This was something Tony hadn't counted on.

"Yes."

"Both little gray schnauzers?"

"Yes."

"Packy's just about six months old."

"They both are."

"Packy's gray with a little black mark on his breast."

"They both have black marks on their breasts."

"And they're both gray?"

"Yes."

Tony was beginning to get frightened. "Then how are we going to tell which one is Packy?"

"I don't know," Mr. Kelly said.

"How long is it till the truck leaves?"

"They're ready to go right now."

"Well--can't you make them wait till I get there?"

"I don't know," Mr. Kelly said. "I'll try. Hold on a minute."

"Wait!" Tony had an idea. "Where did the boys who brought in the schnauzers find them? What part of town?"

"I don't know," Mr. Kelly said.

"Well--can't you ask them?"

"They're gone now, Tony," Mr. Kelly said. "They left the dogs and then they went on. All I know is that one of the boys goes to Mark Twain School and the other one goes to Lincoln."

Tony was excited. It was the first break he had had. "Are you sure, Mr. Kelly?"

"Yes, I'm sure."

"And do you know which dog it is the boy from Lincoln brought in?"

"Sure."

"Then hold him! That's Packy!"

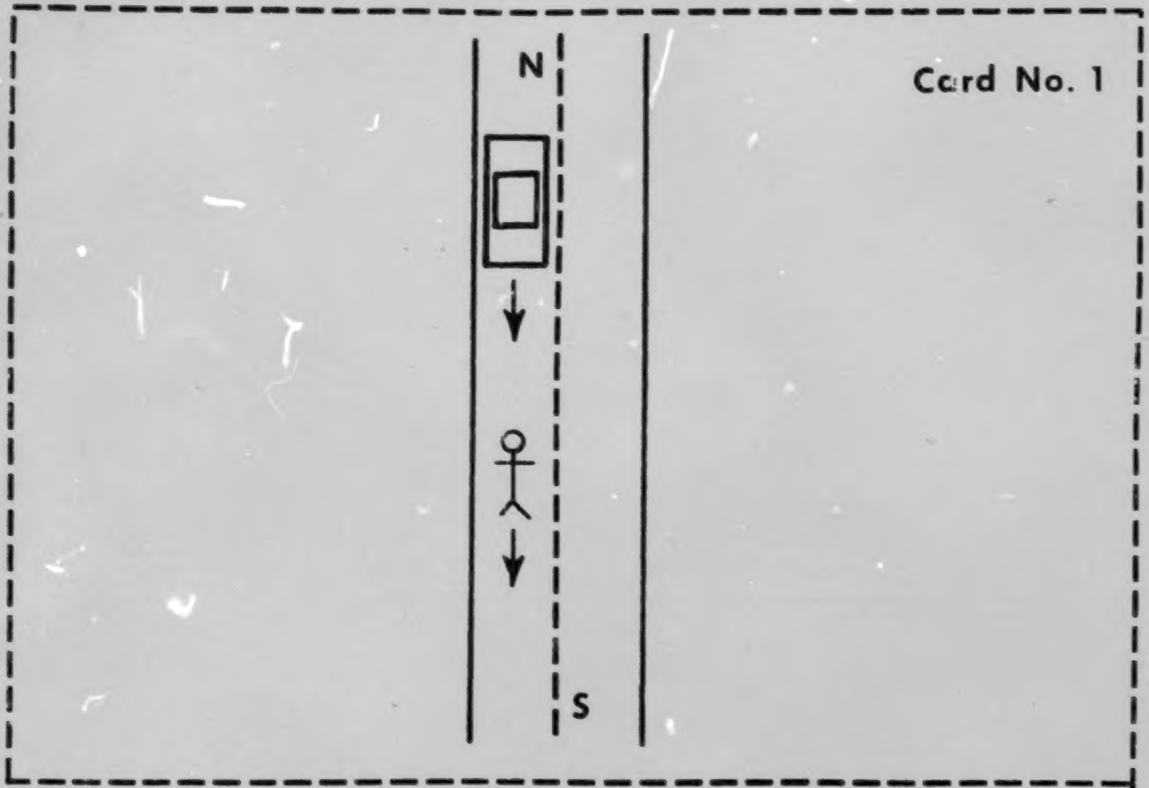
"How do you know?" Mr. Kelly asked.

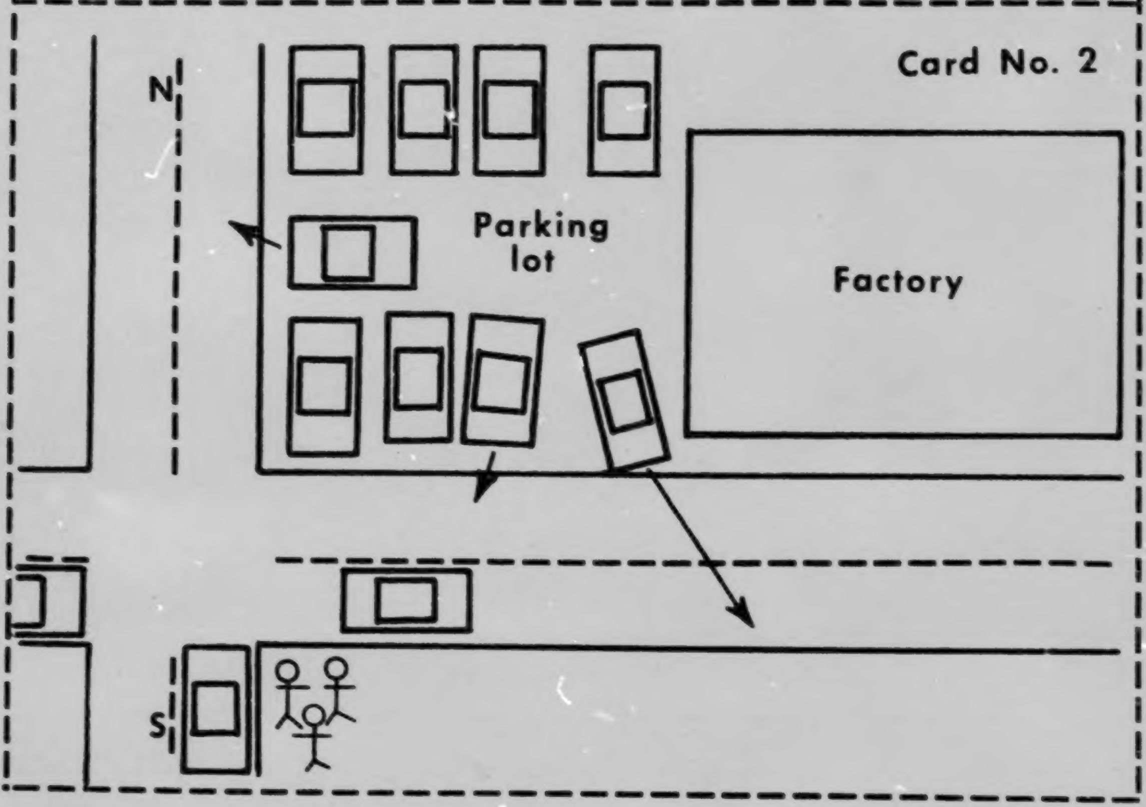
"I'll tell you when I get there," Tony told him.

When he and Harry went trotting into the D-X driveway twenty minutes later, Mr. Kelly was standing there holding a little gray schnauzer on a leash. The truck was gone. Tony dropped to this knees in front of the dog and lifted his forepaws. The dog ran out a moist, pink tongue and kissed Tony on the sweaty forehead. It was Packy!

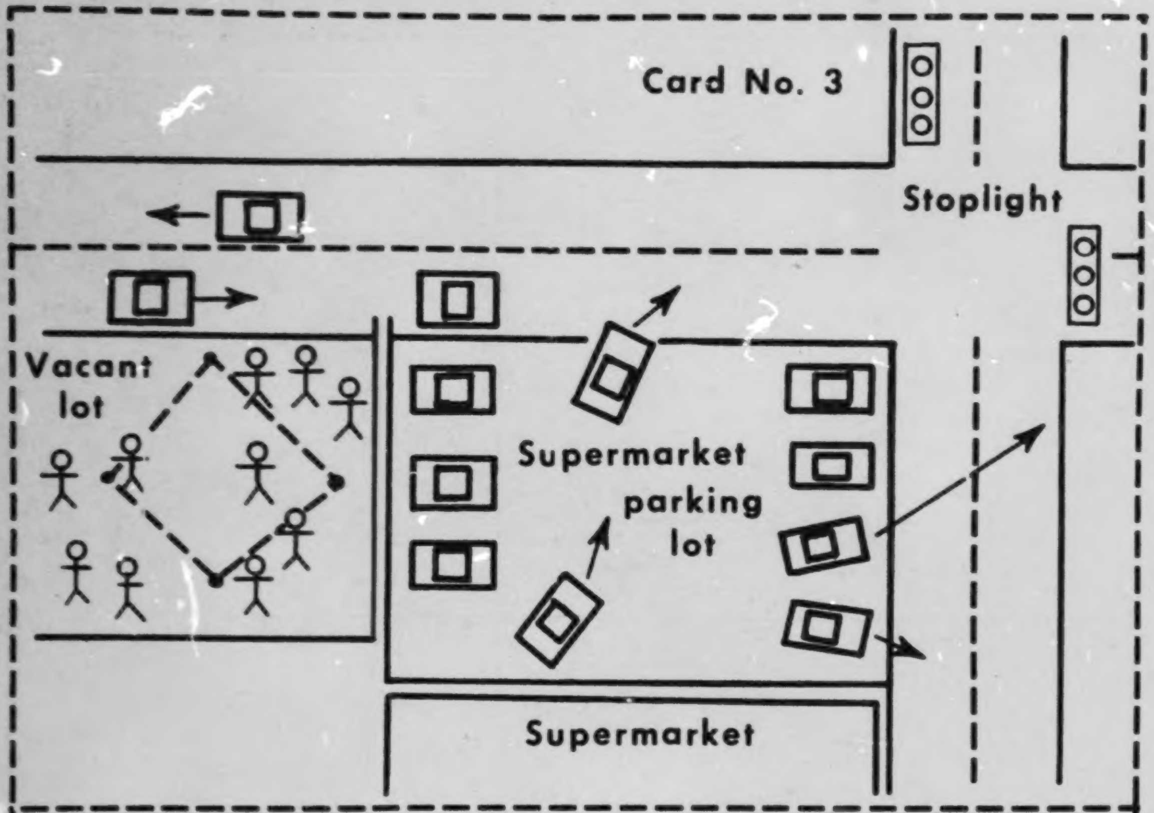
How had Tony known that Packy had been picked up by a boy who went to Lincoln School instead of Mark Twain? There are five reasons. Go back through the story and find the reasons.

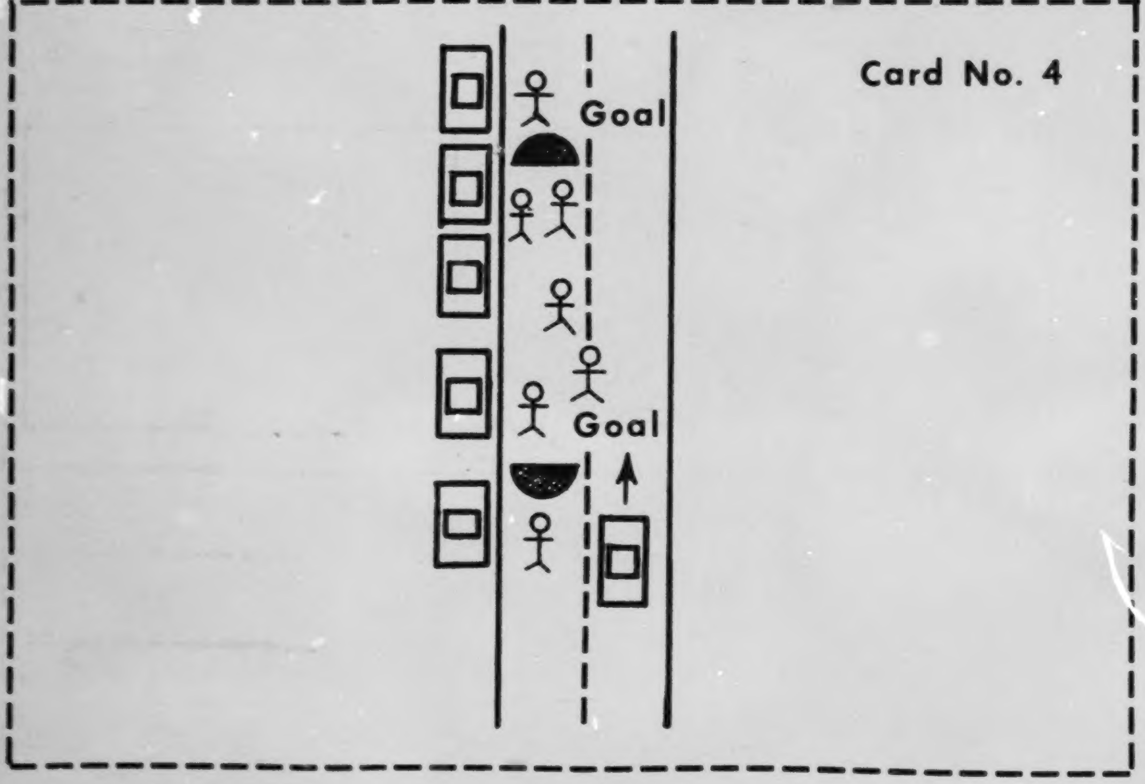
Trim along dotted lines and then mount on 5" × 7" cards.




Card No. 2
N
Parking lot
Factory
S

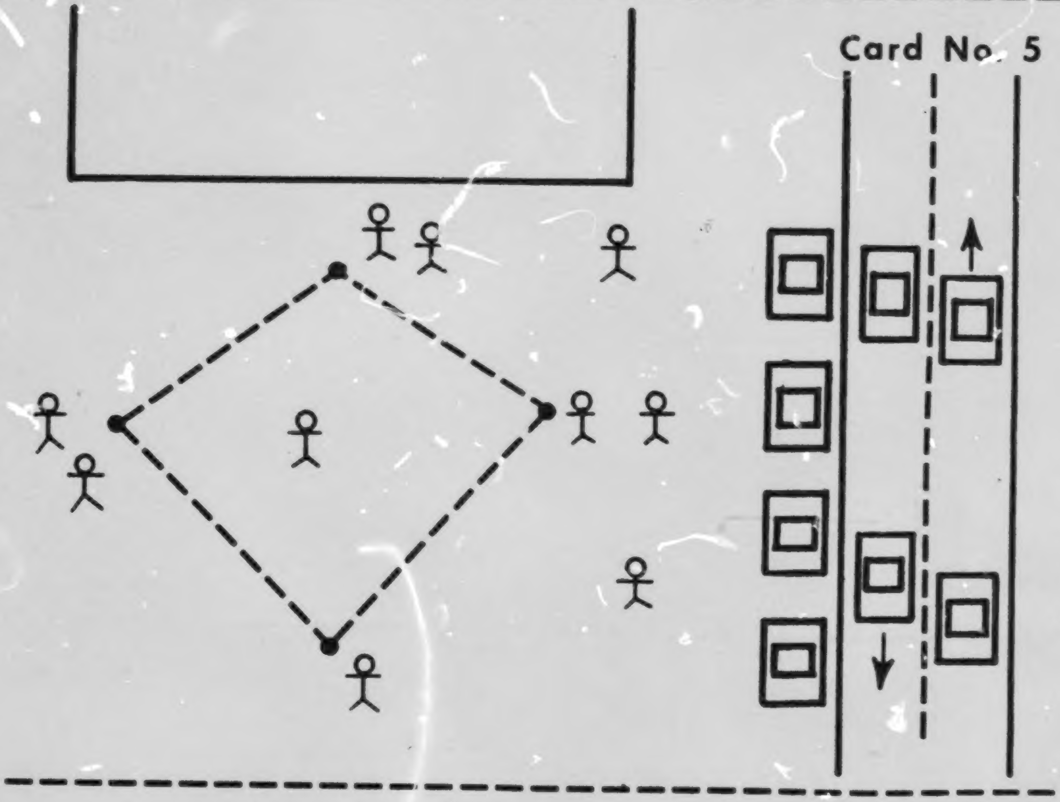
Trim along dotted lines and then mount on 5" X 7" cards.


Card No. 3
Stoplight
Vacant lot
Supermarket parking lot
Supermarket

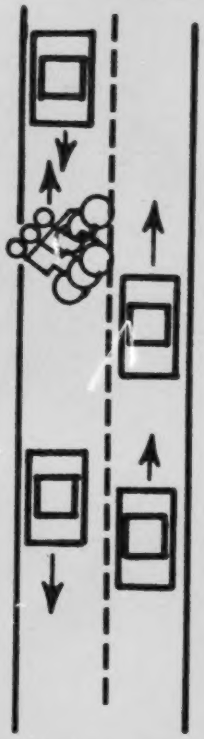

Card No. 4
Goal
Goal

Trim along dotted lines and then mount on 5" x 7" cards.

Card No. 5



Card No. 6



Trim along dotted lines and then mount on back of corresponding card; Card 1 on back of Card 1, etc.

Card No. 1

SCENE:

7:30 A.M. on a cold, gray, overcast day

PARTICIPANTS:

Car driving south
Child also walking south

NO SIDEWALKS

MUDDY SHOULDERS

CHILD WEARING GRAY CLOTHING

MOTORIST HURRYING TO WORK

Card No. 2

SCENE:

Road in front of factory area

TIME:

5 o'clock in the evening; a shift of the factory work has just been completed.

PARTICIPANTS:

3 children walking north; cars on highway going north and south; cars leaving parking lot - going in all directions.

Card No. 3

SCENE:

Neighborhood shopping center;
vacant lot

TIME:

4 P.M.

PARTICIPANTS:

10 boys are playing baseball in the vacant lot.

CARS ON BUSY STREETS

CARS ENTERING AND EXITING FROM PARKING LOT

STOPLIGHT

Card No. 4

SCENE:

Deserted street in a residential area

TIME:

Late afternoon

PARTICIPANTS:

Several boys have set up hockey goals in the street and are playing hockey. The goals are portable and can be easily moved.

PARKED CARS ALONG THE SIDE OF THE STREET

Trim along dotted lines and then mount on back of corresponding card; Card 1 on back of Card 1, etc.

Card No. 5

SCENE:
Front yard in residential area

TIME:
Saturday morning

PARTICIPANTS:
Several boys and girls playing baseball

CARS PARKED ALONG THE STREET

CARS MOVING BOTH NORTH AND SOUTH

Card No. 6

SCENE:
A busy street

TIME:
Anytime

PARTICIPANTS:
3 girls on bicycles riding north

CARS MOVING BOTH NORTH AND SOUTH

RESOURCE LIST

ORGANIZATIONS

Aetna Casualty and Surety Company, Driver Education Services, 151 Farmington Avenue, Hartford, Connecticut 06115.

Allstate Insurance Company, 7770 Frontage Road, Skokie, Illinois 60076.

American Automobile Association, 1712 G Street NW., Washington, D. C. 20006.

American Automobile Association-North Carolina, Carolina Motor Club, Inc., 701-3 South Tryon St., P.O. Box 60, Charlotte, North Carolina 28202.

Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005.

National Bicycle Dealers Association, 29025 Euclid Avenue, Wickliffe, Ohio 44092.

National Education Association, American Association for Health, Physical Education and Recreation, 1201 16th Street NW., Washington, D. C. 20036.

National 4-H Service Committee, Inc., Program Services, 150 North Wacker Drive, Chicago, Illinois 60606.

National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

North Carolina Department of Motor Vehicles, Traffic Safety Education Division, 1100 New Bern Avenue, Raleigh, North Carolina 27611.

North Carolina Department of Public Instruction, Education Building, Raleigh, North Carolina 27611.

North Carolina Department of Transportation, Bicycle Coordinator, P.O. Box 25201, Raleigh, North Carolina 27611 (for bikeways information).

North Carolina State University, Agricultural Extension Service, Department of Agricultural Information, Box 5037, Raleigh North Carolina 27607.

Schwinn Bicycle Company, 1856 Kastner Avenue, Chicago, Illinois 60635.

University of North Carolina at Chapel Hill, Highway Safety Research Center, Craige Trailer Park, Chapel Hill, North Carolina 27514.

The Wheelmen, 6239 Anauista, Flint, Michigan 48507.

RESOURCE LIST - PEDESTRIAN SAFETY

FILMS

Be Safe . . . Be Seen. (16 mm, color, 15 min.) Photographed throughout Europe, this film illustrates the hazards of being a pedestrian and the importance of being seen at night through the use of reflective materials. Available from the Countryman-Klang, Inc., 905 Park Avenue, Minneapolis, Minnesota 55404.

Easy Steps. (1973, 16 mm, color, 11 min.) This film places emphasis on communication with drivers and others in the traffic environment, and looking out for yourself as a pedestrian. Available from Film Loops, Inc., P.O. Box 2233, Princeton, New Jersey 08540.

I'm No Fool as a Pedestrian. (1971, 16 mm, color) Ever since the Egyptians built the first paved roads in 3000 B.C., the pedestrian has been fighting for his life. The sidewalk, first invented in Paris in 1780, gave some relief, but soon the automobile came and the pedestrian has had to learn where and when to walk. Only by following the rules can the pedestrian successfully reach his goal from one place to another. Available from Walt Disney Educational Materials, 495 Route 17, Paramus, New Jersey 07652.

On Your Way to School. (1971, 16 mm b&w or color, 10 min.) Describes precautions for children on the way to and from school. Available from Sid Davis Productions, 1046 South Robertson Boulevard, Los Angeles, California 90035.

Pedestrian Signs and Signals. (1972, 16 mm, color, 11 min.) This film features three scenes taken by hidden cameras, to illustrate crosswalk behavior. The audience is asked to discuss the merits of each scene separately. The new international traffic signs are used to stimulate new awareness and understanding of these aids to maximize children's safety. Available from AIMS Instructional Media Services, Inc., P.O. Box 1010, Hollywood, California 90028.

Rock and Roll with the Safety Patrol. (1971, color, 15 min.) Rocky and Rollo, two animated characters attempt to "free" school children from control of safety patrols. Available from American Automobile Association, Carolina Motor Club, 701-3 South Tryon Street, P.O. Box 60, Charlotte, North Carolina 28201.

Step Lightly. (1968, 16 mm, color, 15 min.) Expresses the importance of pedestrian and cyclist to be reflectorized on the road at night. Available from Countryman-Klang, Inc., 905 Park Avenue, Minneapolis, Minnesota 55404.

The Talking Car. (1969, 16 mm, color, 16 1/2 min.) After a near miss when he ran into the street without looking for oncoming cars, Jimmy--in a dream sequence--is drilled by three talking cars as to how well he knows the "See and Be Seen" traffic safety rules. Available from American Automobile Association Foundation for Traffic Safety, 734 15th Street NW., Washington, D.C. 20005.

The Traffic Watcher. (1971, 16 mm, color, 15 min.) A helicopter pilot for a Washington, D.C., radio station describes the safety rules and good habits to follow in traffic and pedestrian safety. Available from Encyclopedia Britannica Educational Corp., 425 North Michigan Avenue, Chicago, Illinois 60611.

Walking Home from School. (1970, 16 mm, color, 11 min.) Jane is asked to look closely at the things she passes everyday on her way home. In doing so, she notices the differences in the houses, streets, street signs, walkways, etc. Safety is stressed in crossing streets and driveways. Available from AIMS Instructional Media Services, P.O. Box 1010, Hollywood, California 90028.

FILMSTRIPS

I'm No Fool as a Pedestrian. (1971, color) Ever since the Egyptians built the first paved roads in 3000 B.C., the pedestrian has been fighting for his life. The sidewalk, first invented in Paris in 1780, gave some relief, but soon the automobile came and the pedestrian has had to learn where and when to walk. Only by following the rules can the pedestrian successfully reach his goal from one place to another. Available from Walt Disney Educational Materials, 495 Route 17, Paramus, New Jersey 07652.

Safe and Sound Along the Way. (1969, 35 mm strip, color) Introduces traffic safety for pedestrians, vehicle passengers, bicycle riders. Available from Society for Visual Education, Inc., 1345 Diversey Parkway, Chicago, Illinois 60614.

Safety Is No Accident: Series. (1972, 35 mm strip, color, 8 min.) This series contains four filmstrips ("Stop, Look, and Think;" "Bicycle Rules of the Road;" "Safety . . . Walk to School") which feature pedestrian, school, and bicycle safety. Available from AIMS Instructional Media Services, P.O. Box 1010, Hollywood, California 90028.

Safety on the Way to School. (1968, 35 mm strip, color) Demonstrates traffic safety for pedestrians, primary to intermediate grades, on their way to school. Available from Curriculum Material Corp., 1319 Vine Street, Philadelphia, Pennsylvania 19107.

Your Adventures in Traffic Safety: Units 1 and 3. (1971, 35 mm strip, color) Describes traffic and pedestrian safety rules to follow as a part of a 4-unit series, which also includes bicycle and passenger safety rules. Available from Professional Arts, Inc., 1752 Parrott Drive, San Mateo, California 94402.

BOOKS FOR TEACHERS

Anderson, William G. Learning to Drive. Reading, Massachusetts: Addison-Wesley Publishing Company, 1971.

Ashley, Rosiland Minor. Successful Techniques for Teaching Elementary Language Arts. West Nyack, New York: Parker Publishing Company, 1970.

Braley, William T., Geraldine Konicki, and Catherine Leedy. Daily Sensormotor Training Activities. Freeport, Long Island: Educational Activites, Inc., 1968.

Burke, Margaret B. Look, Listen and Learn. New York: Harcourt Brace Jovanovich, Inc., 1971.

Chandler, Bessie E. Early Learning Experiences. Dansville, New York: The Instructor Publications, Inc., 1970.

Here's How - Traffic Safety Project Ideas. American Mutual Insurance Alliance, Stromberg Allen and Company, 1963.

How to Organize and Supervise a School Safety Patrol. American Automobile Association Foundation for Traffic Safety, 734 15th Street NW., Washington, D. C. 20005.

Improving Safety Patrols: A Guide. National Education Association, Safety Education Commission, 1201 16th Street NW., Washington, D. C. 20036.

Scharzer, Alfred, and Edward A. Suchman. Current Research in Childhhod Accidents. New York: Association for the Aid of Crippled Children, 1960.

Van Witsen, Betty. Perceptual Training Activities Handbook. New York: Teachers College Press, Bureau of Publications, Columbia University, 1967.

Vernon, M. D. Perception Through Experience. Great Britain T and A Constable, Ltd. Distributed in U.S.A. by Barnes and Noble Books, 1970.

BOOKS FOR STUDENTS

Bailey, Carolyn Sherwin. The Little Rabbit Who Wanted Red Wings. New York: Platt and Munk, Inc.

Birnbaum, A. Green Eyes. New York: Capitol Publishing Company, Inc., 1953.

Bright, Robert. I Like Red. Garden City, New York: Doubleday and Company, Inc.

Brown, Mary Wise. Big Red Barn. New York: Young Scott Books, 1956.

Calhoun, Beatrice, and Mike Kilby. How Do You Go to School? Pendleton, Oregon: Kilby Associates, 1970.

Dines, Glen. Pitodoe the Color Maker. New York: The Macmillan Company, 1959.

Glavach, Matt J., and Donovan Stoner. Puzzles and Patterns. Austin, Texas: Steck-Vaughn Company, 1970.

Glogau, Lillian, and Edmund Krause. Let's See. St. Louis, Missouri: American Optometric Association, 1970.

Hoffman, James. Come Play With Me. Birmingham, Michigan. The Instructional Fair, Inc., 1970.

Meglin, Nick. The ABC's of Safety. Tampa, Florida: Shelley Graphics, Ltd., and Renewal Products, Inc., 1968.

BOOKLETS, LEAFLETS, AND MAGAZINES

ABC's of Pedestrian Safety. Greenfield, Massachusetts: Channing L. Bete, Inc., 1969.

Accident Prevention Can Be Learned. Metropolitan Life Insurance Company, 1968.

Guide to School Pedestrian Safety Program. National Congress of Parents and Teachers, 700 North Rush Street, Chicago, Illinois 60611.

Journal of Safety Research. Presents research information in all areas of safety and accident prevention; quarterly, 1-year subscription. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

Manual on Pedestrian Safety. (1964) American Automobile Association, 1712 G Street NW., Washington, D.C. 20006.

Pedestrian Safety. Instructor. November 1972.

Safety Guides for You - In the Intermediate Grades. National Commission on Safety Education, National Education Association, 1201 16th Street NW., Washington, D.C., 1962.

School Pedestrian Safety Policies and Warrants. Compiled and printed by the Engineer Department, County of San Diego, 1969.

10 Traffic Safety Guides. (1969-70) American Automobile Association, 1712 G Street NW., Washington, D.C. 20006.

Traffic Safety. Monthly journal concerned with motor vehicle and pedestrian safety; 12-issue subscription, $5.10. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

The Young Pedestrians. American Automobile Association, 1712 G Street NW., Washington, D.C. 20006.

Your Child's Safety. (1968) Metropolitan Life Insurance Company.

GAMES

Perception Plaques (a matching game). Creative Playthings, P.O. Box 1100, Princeton, New Jersey 08540.

Positive and Negative (a perceptual matching game). New York: Manufactured by Otto Maier Verlag, Rauensburg, West Germany, for Creative Playthings, a Division of CBS, Inc.

Traffic Sign Bingo. New York: Norbert Specialty Corporation.

CURRICULUM AND INSTRUCTIONAL MATERIALS

Miniature Traffic Signs. Milton Bradley Company, Des Plaines, Illinois 60018.

Nasca, Donald. Science Concepts and Processes-Gravity and Other Forces. Study prints containing charts and experiments concerned with gravity and other forces. Dansville, New York: F. A. Owen Publishing Company, 1966.

Useful Signs to See and Read. Teaching aid for functional reading programs. Thirty large cards contain traffic, driver education and safety signs which children are likely to encounter in everyday living. Suggestions for use are included. Milton Bradley Company, Des Plaines, Illinois 60018.

BICYCLE SAFETY

Level C

BICYCLE SAFETY UNIT - LEVEL C

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BICYCLE SAFETY - LEVEL C

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BICYCLE SAFETY - LEVEL C

INTRODUCTION

Bicycling has always been popular with the young, and today its popularity is increasing with all age groups. Unfortunately, bicycle accidents are also increasing. This unit of instruction has been developed so [illegible]t you can help your students avoid accidents and keep their bicycling safe and pleasurable.

Over 1,000 bicyclists are killed or injured on North Carolina streets and highways each year. Seventy-three percent of bicycle casualties involve children under the age of 15. The greatest number of bicycle accidents take place in the summer months and on Saturdays, and bicycle accidents are more likely to occur in residential areas on city streets. Fatal accidents occur primarily on roads in open country and on noncity streets. However, any bicycle accident which occurs after dark on an unlighted road has a greater probability of being fatal than an accident which occurs in daylight.

Perhaps the most significant characteristic of bicycle accidents in North Carolina is that they are likely to occur where there is some kind of intersection--an alley, a driveway, or two roads crossing. In the typical accident, the cyclist is a young male between 10 and 14 who suddenly appears in the path of an oncoming car; the driver of the car is rarely considered at fault.

In the booklet Bicycling for Recreation and Commuting (USDOT/USOOI), some other noteworthy facts emerge. One out of three bike accidents involved an automobile. One out of four bikes involved was defective mechanically. Two out of three riders killed or injured had violated a law or safety rule. Some common causes of accidents are:

1. Improper turns.
2. Disregarding traffic signs, signals, and markings.
3. Carrying an extra rider.
4. Running into an open door of a parked car.
5. Failing to yield right-of-way.

The Bicycle Safety Unit was developed with these facts in mind. You may present the facts to the students so that they can make informed decisions about biking behavior.

The unit first presents the advantages and limitations of bicycles to give the students a picture of how they as bicyclists relate to the total traffic environment. Natural laws such as friction, reaction time, and stopping distances are presented to explain interactions between bicyclists and pedestrians in traffic. When students drive their bikes on the street, they must obey all Rules of the Road that other vehicles must obey. A student should drive a bike that is appropriate to his size, and he should know how to make certain that the bike is in sound mechanical condition. The bicyclist's defense is the most important part of his safety posture; the student should be aware of traffic hazards and should know how to avoid them. And finally, the students should possess the motor skills necessary for proper control of their bikes; your student will especially enjoy these activities. With skills and knowledge, the young bicyclist can make responsible decisions about safety and be better prepared to meet the world of traffic. This unit will hopefully reduce the involvements of children in bicycle accidents and, furthermore, aid in the development of responsible driving habits when cycling and later when the students become auto drivers.

UNIT OBJECTIVES

1. To develop safe, responsible biking habits by:
   - Informing the children of the Rules of the Road which they must obey.
   - Enabling the children to assess possible dangers and to act intelligently to avoid or respond to them.
   - Enabling the children to maintain their bicycles in safe working order and to develop skills in controlling their bicycles.
2. To encourage good driving practices which will carry over into the children's lifelong careers as bicycle, automobile, and/or motorcycle drivers.

BICYCLE SAFETY - LEVEL C

UNIT CHECKLIST FOR TEACHERS

This Bicycle Safety Unit Checklist is provided as a guide to assist you in determining your students' knowledge of bicycle safety practices.

1. Do your students know the advantages and limitations of bicycles?
2. Do your students act as "bicycle drivers" instead of "bicycle riders?"
3. Do your students know what are bike routes?
4. Do your students understand the concept of friction, stopping distances, and reaction time?
5. Do your students know the visual limitations of drivers, bicyclists, and pedestrians?
6. Do your students obey all the traffic laws and rules that a motorist must obey when they drive their bikes?
7. Do your students give hand signals for turning, slowing, and stopping?
8. Do your students use a headlight and rear reflector when driving at night? Do they use reflective materials to make themselves visible?
9. Do your students avoid carrying passengers on their bikes?
10. Do your students know the existing local or county bicycle ordinances?
11. Do your students know where accidents are most likely to occur?
12. Can your students identify the parts of a bicycle?
13. Do your students keep their bikes in good mechanical condition?
14. Do your students drive bikes that fit their physical sizes?
15. Do your students know hazards which are frequently encountered by bicyclists and ways to avoid hazards?
16. Do your students use "good form" for driving a bicycle?
17. Do they possess the necessary motor skills in order to drive bikes safely?

CHECK YOUR BIKE SAFETY KNOW-HOW

1. Do you know the advantages and limitations of bicycles?
2. Do you act as "bicycle drivers" instead of "bicycle riders?"
3. Do you know what are bike routes?
4. Do you understand the concept of friction, stopping distances, and reaction time?
5. Do you know the visual limitations of drivers, bicyclists, and pedestrians?
6. Do you obey all the traffic laws and rules that a motorist must obey when you drive your bike?
7. Do you give hand signals for turning, slowing, and stopping?
8. Do you use a headlight and rear reflector when driving at night? Do you use reflective materials to make yourself visible?
9. Do you avoid carrying passengers on your bike?
10. Do you know the existing local or county bicycle ordinances?
11. Do you know where accidents are most likely to occur?
12. Can you identify the parts of a bicycle?
13. Do you keep your bike in good mechanical condition?
14. Do you drive a bike that fits your physical size?
15. Do you know hazards which are frequently encountered by bicyclists and ways to avoid hazards?
16. Do you use "good form" for driving a bicycle?
17. Do you possess the necessary motor skills in order to drive a bike safely?

BICYCLE SAFETY - LEVEL C

CONCEPT I: ADVANTAGES AND LIMITATIONS OF BICYCLES

OBJECTIVE

The student will be able to list the advantages and limitations of bicycles.

CONTENT FOR DISCUSSION

Bikes are pollution free and are an economical means of transportation. They help the student have fun, get to school, and earn money. Learning to drive a bike skillfully and responsibly can help the student become an expert car driver when he is older. Bikes are more maneuverable than cars and are easier to park. The modern bicycle has become one of the most efficient means of transportation.

Bikes have limitations. They only carry one person (unless there is an extra seat) and a limited amount of packages. They are smaller than cars and therefore less visible. Stability depends on the driver. The driver must be an expert cyclist to keep the bike under control. Cracks in the pavement, debris in the road, and wet or gravelly surfaces can throw the biker off balance. Because of these limitations, bicyclists must take extra precautions.

When anyone drives a bicycle in the street, the bicycle is a vehicle and the operator is a driver. The term bicycle "driver" has long been used by safety experts and should be promoted among the students. The term "driver" connotes responsibility for control and use of the bike. The term "rider" connotes a lack of responsibility (as in just going along for the ride) and implies that the bike is a toy. When anyone operates a bicycle, he is a driver of a vehicle.

The only safe place a bike should be used for play is in a play area such as a park or playground. When it is in use anywhere else, the bike is a vehicle, and it must be driven like a vehicle and according to the law which applies to motor vehicles. In some places bicycle drivers are provided with safer places to drive. Bicycle routes are marked to warn auto drivers of bikers. Bike routes may be regular streets that do not have much motor vehicle traffic; they may be special street lanes that only bicycles are allowed to use. Bikeways are special paths through parks or other areas where motor vehicles cannot drive. Bicycle drivers on bicycle routes should follow the Rules of the Road so that all vehicles can travel safely.

ACTIVITIES

1. Categories. Have the students discuss the different ways they use their bikes. Have them categorize these under enjoyment, physical fitness, earning money, and ecology.

2. Front Page. Have the students write a newspaper article on the advantages of bicycling. Ask them to try to sell bicycling.

   Variation: Have the students write newspaper articles that can be used for advertisements for selling or buying bicycles. These advertisements can be used in school newspapers, if students wish.

3. The Illustrated Bike. Have the students design colorful posters to show the advantages of bicycling. Place these posters in and around the school in locations such as in the cafeteria.

4. Muscle Bound. Have the students identify the different muscles used in bicycling. Discuss how bicycling benefits these muscles and the total body.

5. Where and Why.[1] Have the students analyze the neighborhood to determine where bicycles are driven. Outline the reasons why people drive their bikes in the area and the ways other people use the area. Observe and evaluate signs. How should a bike be used in each specific location? For fun? For travel? As a toy or as a vehicle? Using a map of other areas of the city, decide if the area is one in which to drive bikes. If so, for pleasure or transportation?

6. Bicycle Log. Have the students keep a log of their bicycle driving for one week. Analyze entries in the log for play and travel uses.

7. Bike Routes. Have the students define "bike route" and illustrate or discuss what makes a bike route safe or hazardous. Have students look in magazines and newspapers for articles about bicycle routes. A group of students may wish to research the current status of bicycle routes in the community, State, and Nation.

The North Carolina Department of Transportation has established a Statewide Bicycle Program for coordinating and providing assistance for the establishment of bicycle routes. The program contains registration plans and promotes bicycle-related legislation. For more information about ongoing programs, write to:

Bicycle Coordinator
N. C. Department of Transportation
P. O. Box 25201
Raleigh, North Carolina 27611

The Bicycle Institute of America (122 East 42nd Street, New York, N.Y. 10017) publishes a newsletter Boom in Bikeways, which might furnish additional information.

Have the students compare bike routes to streets and sidewalks. Discuss which would be the safest for cyclists to use. Have the students develop a set of regulations for safe uses of bicycle routes. Decide if pedestrians should be allowed on bicycle routes. If so, make up rules for them to follow.[9]

8. Bicycle Route Engineers.[9] Have the students take the roles of bicycle route engineers and develop a model bike route system for their community or a part of it. Have them study traffic flow, road surfaces, signs and signals, visibility, etc., to determine the best routes. Have them indicate the routes on an existing community map or on a map or model which they construct. If students wish to continue this project, they might contact their city council about the possibility of actually constructing bicycle routes.

9. Bicycle History.[2] Have the students research the various kinds of bicycles that have been popular since the first one was invented. If

possible, have the students examine pictures of the various types of bicycles and compare their features as to safety, comfort, need, etc. Have individual students report on the different bicycles found in "History of the Bicycle." An outline of the history is included at the end of this concept (pp.124-126).

a. Have the students make a story chart, using the information given in "History of the Bicycle," that will reflect the experiences one might have had on such bicycles before the modern bicycle was invented.

b. As a creative writing project, have the students pretend that they have just invented a bicycle and tell how they would make it safe to ride. (This can be done as a joint class project.) Having them draw an illustration of the bicycle they have written about would add a nice touch.

c. Have the children trace the "History of the Bicycle" through library research, older citizens in the community (grandparents), or local bicycle salesmen, etc; in terms of their importance for transportation.

d. Plan a school assembly on safety. Center it around the "History of the Bicycle" and the activities a, b, and c. Emphasize the advantages and limitations of each bike type from the past to the present.

10. Film for Discussion, I'm No Fool with a Bicycle, or Just like a Car. (See resource list for further information regarding this and other related films and filmstrips.)

11. Language Arts. Use the vocabulary list and the activities to emphasize traffic safety words.

Vocabulary List

balance
bicycle
brake
chain
control
driver
fenders
frame
gears
handlebars
hazards
highrise
lightweight
middleweight
pedal
performance
reflector
saddle
skills
tires
vehicle

a. Make a dictionary of safety terms using the vocabulary words or other related safety terms. Use them in a spelling lesson.

b. Have the students make up their own crossword puzzles using bicycle safety words.

HISTORY OF THE BICYCLE

Egyptian, as well as Greek, works of art indicate that a crude two-wheeled vehicle propelled by the feet was known to the ancients. Similar machines were used later in England, France, and Germany. The forerunners of the modern bicycle, however, are nineteenth century developments.

THE DANDY HORSE

The real history of the bicycle began when a Prince of Wales (later King George IV of England) made his first dashing appearance on a dandy horse. This machine became quite a fad with the rich, fashionable people of the day, but ordinary people could not afford it; that is why it was often called dandy horse. Other names included hobbyhorse, walk-along, swiftwalker, and Draisine.

The dandy horse was invented in 1816 by Baron von Drais, chief forester to the Grand Duke of Baden. He found his invention valuable for traveling along the forest paths. It became the first practical bicycle.

The dandy horse consisted of two wheels of equal size, arranged in tandem and connected by a perch. The rider rested part of his weight on a wooden armrest in front and propelled the machine by striking the ground with his feet--first one foot and then the other. A handle connected to the front wheel was used to steer the vehicle.

THE BONESHAKER

In the 1860's, a French carriagemaker Pierre Lallemont, developed a bicycle more nearly like the modern bicycle. It had cranks and pedals fitted to the front wheel axle. The cyclist could propel it in a manner similar to that for propelling the present-day tricycle.

This vehicle had a wooden frame and large wheels with iron-band tires. It was aptly called a boneshaker, from the rough treatment it gave the rider on the rutted and cobbled streets of that day.

In the late 1860's, however, lightweight metal wheels with wire spokes and solid rubber tires were introduced. These improvements overcame much of the difficulty in handling the early bicycles.

THE ORDINARY

The first all-metal bicycle was produced in the 1870's. It had a very large front wheel and a very small rear wheel. In some models the front wheel was 1.5 meters (5 feet) high, or even higher, and the diameter of the rear wheel was as small as 30 centimeters (12 inches). The larger the front wheel, the greater the distance traveled at each turn of the pedals attached to the front axle. The tall man with the larger wheel had a decided advantage in speed over the small man. Speeds of 48 kilometers per hour (30 mph) or more could be attained by a powerful person without too much exertion.

The average ordinary of 1875, sometimes called a roadster, weighed 30 kilograms (65 pounds) in contrast to 16 kilograms (35 pounds) for an American lightweight bicycle. It had a steel frame and solid rubber tires. The ordinary became quite popular, but it was not safe. The size, weight, and difficulty in mounting this bicycle (the seat was more than 1.5 meters (5') above the ground and nearly over the center of the large front wheel), made falls or headers somewhat frequent and dangerous.

THE FIRST SAFETY BICYCLE

In the 1880's, the first safety bicycles were made. They were the prototype of the present-day, streamlined, balloon-tired bicycle. They had front and rear wheels of the same diameter; thus, they were much safer than their predecessor, the ordinary. A chain drive transmitted the power from the pedals to the rear wheels, and was geared in such a manner that a small cyclist had relatively the same advantage as a larger one.

This bicycle achieved speed with safety, and ushered in the golden era of the bicycle during the gay nineties. The popularity of the bicycle was marked during the late nineteenth and early twentieth centuries. The modern bicycle generally resembles the bicycles of this earlier period. Some of the early types, however, have largely disappeared from use; seldom seen today is the companionable or tandem for two or more persons.

THE MODERN BICYCLE

The modern bicycle differs from the safety bicycle chiefly in refinements. The pneumatic tire, for example, did much to add to the comfort of cycling. It was patented in 1888 by John B. Dunlop, an Irish surgeon. He developed the idea for the modern tire by fitting pieces of ordinary garden hose around the wheels of his son's bicycle.

The most significant safety feature of the modern bicycle is the coaster brake. This remarkable mechanism enables the cyclist to coast or to stop quickly at will. Coasting is achieved merely by refraining from pedaling--which puts the bike in "free-wheeling" position. Braking is accomplished by pressing backward on one of the pedals. This action wedges a shoe against a brakedrum and reduces the speed or stops the bicycle, depending on the amount of pressure applied.

Other refinements in the modern bicycle include adjustable handlebars and cushion saddles, drop frames for ladies' bicycles, balloon tires, variable gears on some lightweight bicycles, front wheel and hand brakes, electric headlamps and sound warning devices, and many other useful accessories.

THE LIGHTWEIGHT MODERN

The lightweight bike has become quite popular during the last decade. It differs from models developed before World War II primarily in frame structure and tire style. It resembles a racing bike in simplicity of lines and lack of adornment; at the same time, it retains the comfort and functional features of traditional models.

CONCEPT II: NATURAL LAWS LIMITING VEHICLES, DRIVERS, BICYCLISTS, AND PEDESTRIANS: PART A - REACTION TIME

OBJECTIVE

The student will be able to explain reaction time and identify the problems it presents for the driver, the bicyclist, and the pedestrian.

CONTENT FOR DISCUSSION

Reaction time is the time it takes for a message received from our eyes or ears to be relayed from the brain to our muscles. Sketch a stick figure[7] on the chalkboard and trace the path that a message must take from the eyes to the feet. Reaction time is a limitation everyone has. Peoples' reaction times vary and must be taken into account in traffic situations. Reaction time is one of the basic reasons that running from between parked cars is so dangerous: the driver may see you at the last minute, but before his brain can tell his feet to step on the brake, it is too late.

ACTIVITIES

1. Dollar Bill Experiment.[7] Call a student to the front of the room. Tell the class he will help you to explain a traffic safety rule, using a crisp dollar bill. Have the child extend his thumb and forefinger slightly apart; hold the dollar bill at the tip and suspend it lengthwise so that the center of the bill is between his thumb and forefinger. Tell him to keep his eye on the dollar bill and that you are going to drop it without telling him when. It is his job to catch the bill when it falls; he will not to able to do so. Let others try.

   Make the point that no one can catch the bill because it takes time for the eyes to tell the brain what they see and for the brain to tell the muscles in the thumb and forefinger what to do.

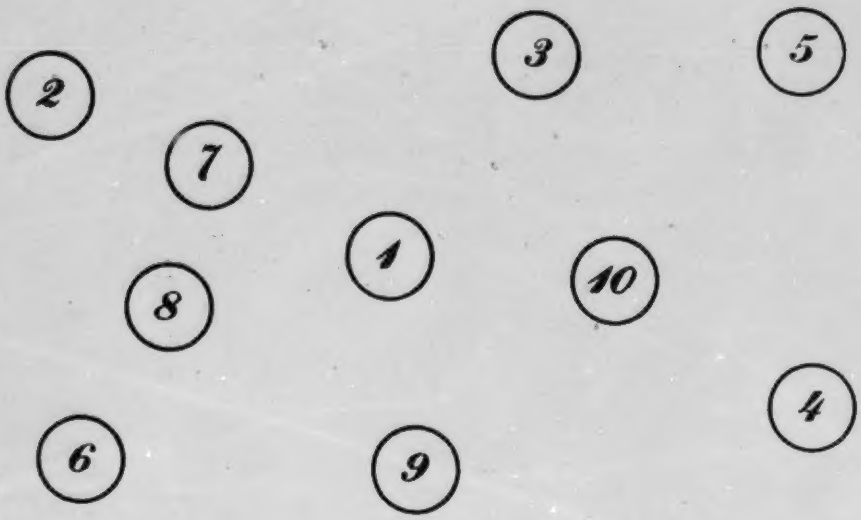
2. Measure Your Reaction Time.[1] Divide the class into pairs and have the students construct reaction time measuring sticks. Give them a strip of tagboard or light cardboard 30 by 5 centimeters (12 by 2 inches) long and have them mark it off into six 5-centimeter sections. Label the sections from one to six. Have one member of the pair hold the strip of tagboard at the top, while his teammate holds his hand 2.4 centimeters (1 inch) below the strip so that he may catch it between his thumb and fingers. There should be a 2.5-centimeter space between the second student's thumb and fingers. The person holding the tagboard should drop it without warning. The other should grab at it as fast as possible. The numbered section where the student grasps the card shows his reaction-time score. Now have the other team member try it. Can the students build up a quicker reaction time through practice? Do reaction times vary? Discuss the principle of reaction time. Point out that a driver has a reaction time too: it takes a driver just as much time to apply the brakes when a pedestrian darts out in front of him.

3. Defensive Driver's Game.[2] Have students play the Defensive Driver's Game, master for reproduction #1 (p. 129), to test their reaction times.

DEFENSIVE DRIVER'S GAME

IT'S EASY. JUST TOUCH THE CIRCLES IN NUMERICAL ORDER AS FAST AS YOU CAN TIME YOURSELF.

READY? GO!



YOU LOST IF IT TOOK YOU MORE THAN *NINE* SECONDS TO COMPLETE THIS REACTION TEST.

BICYCLE SAFETY - LEVEL C

CONCEPT III: NATURAL LAWS - PART B - FRICTION

OBJECTIVE

The student will describe friction and identify the problems it presents to the pedestrian, driver, and bicyclist.

CONTENT FOR DISCUSSION

When two surfaces rub against one another, there is friction. Friction helps bring moving objects to a stop.

When two surfaces rub against one another, there is friction. Officially, friction is the resistance offered to motion by one object upon or through another. The amount of friction between the objects and your hand determines how smooth or rough the object feels. Just as gravity holds everything down to the earth, friction is the stickiness between objects. Rub your hands together. Feel the stickiness? That's friction. Without friction, your feet would not stick to the floor, so you could not walk; it would be even worse than trying to walk on ice. (Icy floors offer a little friction.) And if you did manage to get going, you would not stop until you ran into something! Explore the qualities of friction through the following activities.

ACTIVITIES

1. Surface Hunt.[1] Have the students investigate common objects for smooth and rough surfaces. Conduct the hunt throughout the classroom and the school building. Have large sheets of sandpaper and corregated cardboard available. Make a list of smooth and rough surfaces.
2. Look at It.[1] Have the students examine the rough and smooth surfaces with the unaided eye and with magnifying glasses. Encourage them to describe what they see. Rub a piece of absorbent cotton over the rough and smooth surfaces. What do they discover?

3. Sliders.[1] After the previous experiences, ask the students to explain what makes a surface rough or smooth. Bring out the point that things slide more easily over smooth surfaces than over rough surfaces.

4. Increasing Friction.[1] Discuss which surfaces you would be more likely to slide on. Ask the students to recall sliding on ice, waxed floors, wet floors, smooth stone steps. What precautions do we take to prevent slipping and sliding? Examples are wearing sneakers for sports and putting chains on tires in snow and ice. A baseball player will rub dirt on his hands in order to grasp the bat more firmly; he has made a surface rougher in order to increase friction.

5. Friction Free.[1] Ask the student to imagine what would happen if all friction disappeared. Have them express their ideas through words or pictures. Some of the things that might happen; things could slide forever, you could not twist a screwtop off of a jar, cars would slide or slip all of the time, trains could not start or stop.

CONCEPT IV: NATURAL LAWS - PART C - STOPPING DISTANCES

OBJECTIVE

The student will describe stopping distances and identify the problems they present to the pedestrian, driver, and cyclist.

CONTENT FOR DISCUSSION

Stopping distances for both pedestrians and vehicles depend on speed, the distance traveled during reaction time, the distance traveled before either the brakes can stop the car or your feet can stop your body, and the amount of friction present. Momentum is the natural law which makes it hard to stop a moving body.

ACTIVITIES

1. Momentum.[7] Play the game "Rover, Red Rover." Experiment with walking and various running speeds to show ease and difficulty in breaking through. Does the size of the child make a difference? Discuss the ease and difficulty of stopping cars at different speeds. Will there be a difference in stopping a car or a truck?

2. Stopping Distances. This experiment can be done by having students run, etc., or by having them drive bicycles. Have the students number off in pairs. On a given signal have the first two students begin. When the students on bicycles reach a certain speed, they will signal. After their signal, have a student blow a whistle for them to stop. If the students are running, the whistle may be blown after the students have reached a fairly steady speed. Have a student mark the spot where each student was when the whistle was blown and the point where each stopped. Have the next two students repeat the experiment and vary the rate of speed. If bicycles are not used, students could skip, hop, gallop, slide,

or walk. Compare the stopping distances. What factors cause the differences in stopping distance? What factors could increase the ability to stop? (a rough surface, sneakers, physical control) What factors could make stopping more difficult? (ice, wet pavement or mud, loose gravel)

3. Math and Science Problems.[1] Masters for reproduction #2-#7 offer math and science problems relating to speeds, reaction times, and stopping distances. Note to teacher: The numbers in the table are not direct equivalents of the numbers used for miles per hour in the English system (i.e., 20 mph is not exactly 30 km/h). No direct conversion is used in any of these activities. If you use the metric tables you will be thinking in metric.

   Master #2 - Speed, Reaction Time, and Stopping Distances in Metric (p. 136 ; p. 137, answer sheet) and in English (p. 138; p. 139 , answer sheet).
   Master #3 - Reading and Interpreting Bar Graphs in Metric (p. 140 ; p. 141 , answer sheet) and in English (p. 142 ; p. 143 , answer sheet).
   Master #4 - Bar Graph Activity in Metric (p. 144) and in English (p. 145).
   Master #5 - Speed-Distance-Time Word Problems in Metric (p. 146 ; p. 148 , answer sheet) and in English (p. 150 ; p. 151 , answer sheet).
   Master #6 - Speed-Distance-Time Word Problems in Metric (p. 152 ; p. 153 , answer sheet) and in English (p. 154 ; p. 155 , answer sheet).
   Master #7 - Constructing Bar Graphs in Metric (p. 156 ; p. 158 , answer sheet) and in English (p. 159 ; p. 160 , answer sheet).

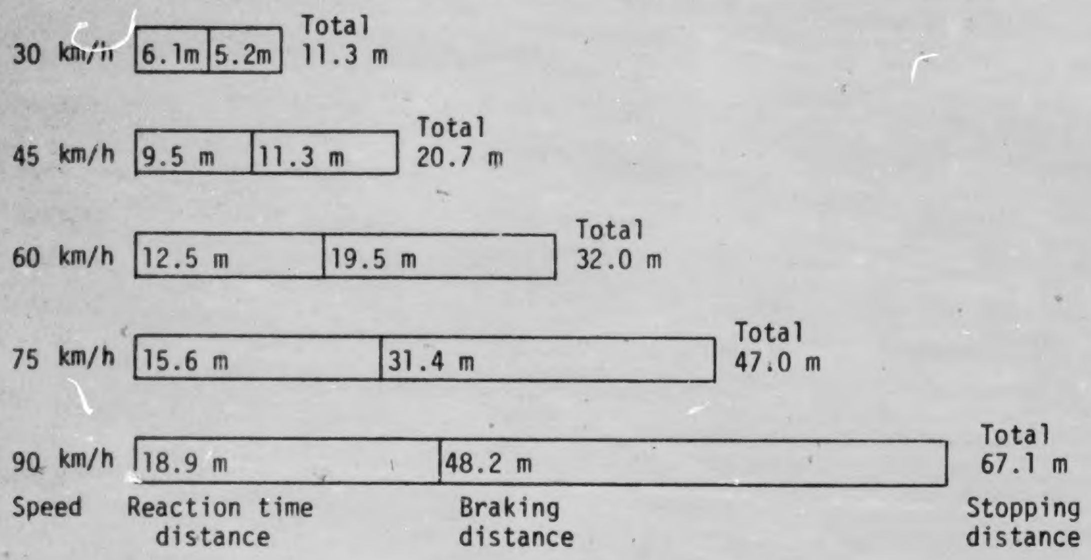
4. Measure It. Have students measure the distance on the playground in meters (m) or feet (ft) required for stopping a car traveling

at various speeds--kilometers per hour (km/h) or miles per hour (mph--as shown below.

Speed (km/h)	Reaction Time Distance(m)	Braking Distance(m)	Total Stopping Distance(m)
30	6.1	5.2	11.3
45	9.5	11.3	20.7
60	12.5	19.5	32.0
75	15.6	31.4	47.0
90	18.9	48.2	67.1

Speed (mph)	Reaction Time Distance (ft)	Braking Distance (ft)	Total Stopping Distance (ft)
20	22	20	42
30	33	40	73
40	44	72	116
50	55	118	173
60	66	182	248

SPEED, REACTION TIME, AND STOPPING DISTANCE - METRIC



1. How far does the car travel during the reaction time at a speed of--

   a. 30 km/h ____________ c. 60 km/h ____________

   b. 45 km/h ____________ d. 75 km/h ____________

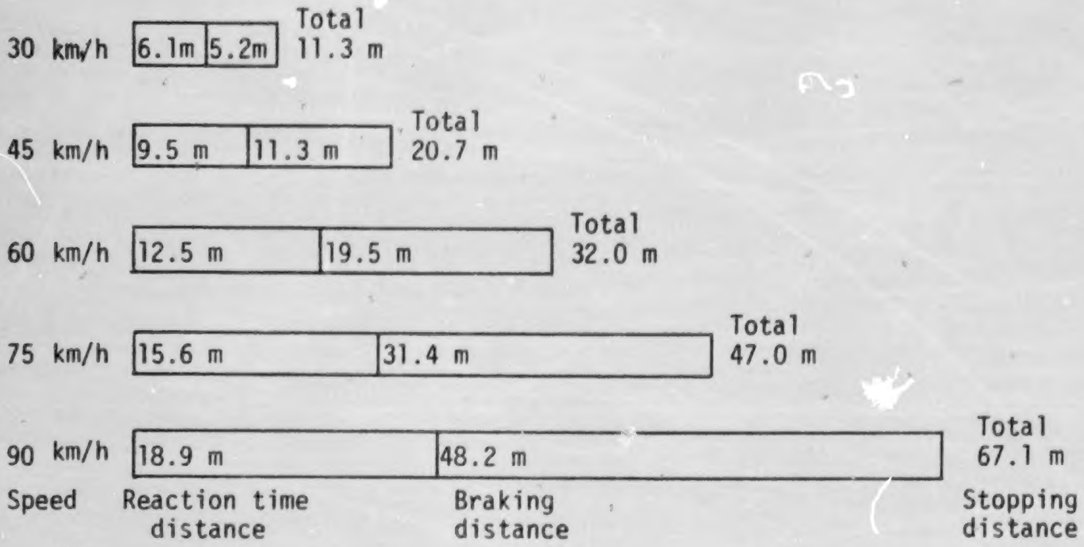
2. Using the chart given to you, answer questions: If a car traveling at 90 km/h travels 18.9 meters during reaction time of the driver, at 105 km/h, how far will the car travel? ________________

3. How many more meters are required to stop when traveling at--

   a. 60 km/h as compared to 30 km/h? ________________
   b. 90 km/h as compared to 45 km/h? ________________
   c. 75 km/h as compared to 30 km/h? ________________
   d. 90 km/h as compared to 60 km/h? ________________
   e. 75 km/h as compared to 60 km/h? ________________

ANSWER SHEET

SPEED, REACTION TIME, AND STOPPING DISTANCE



Note to Teacher: The numbers in the chart are not direct equivalents of numbers used for miles per hour in the English system (i.e., 20 mph ≠ 30 km/h).

1. How far does the car travel during the reaction time at a speed of--

   a. 30 km/h? (6.1 m) c. 60 km/h? (12.5 m)

   b. 45 km/h? (9.5 m) d. 75 km/h? (15.6 m)

2. Using the chart given to you, answer questions: If a car traveling at 90 km/h travels 18.9 meters during reaction time of the driver, at 105 km/h, how far will the car travel? (21.9 m)

3. How many more meters are required to stop when traveling at--

   a. 60 km/h as compared to 30 km/h? (10.7 m)

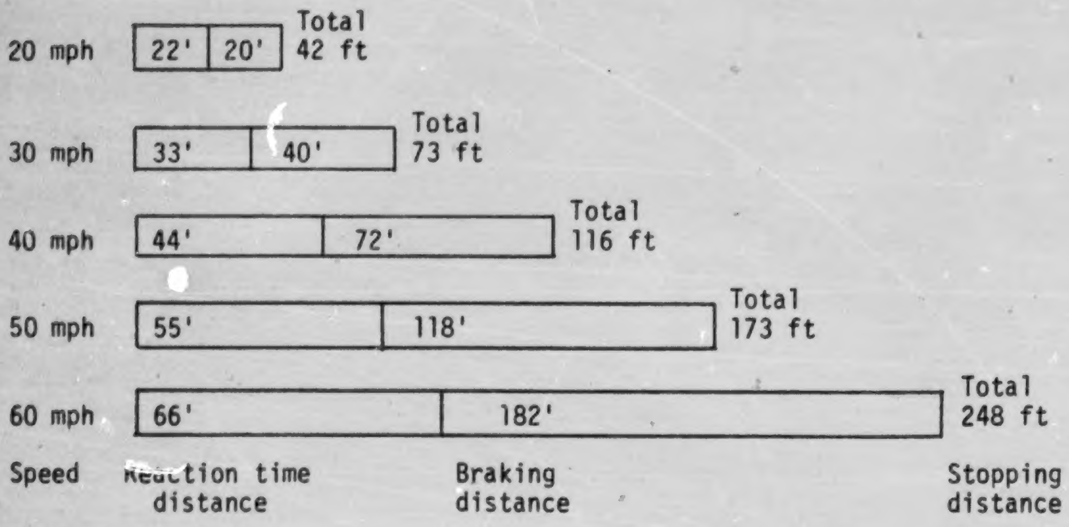
   b. 90 km/h as compared to 45 km/h? (46.4 m)

   c. 75 km/h as compared to 30 km/h? (35.7 m)

   d. 90 km/h as compared to 60 km/h? (25.1 m)

   e. 75 km/h as compared to 60 km/h? (15.0 m)

SPEED, REACTION TIME, AND STOPPING DISTANCE - ENGLISH



1. How far does the car travel during the reaction time at a speed of--

a. 20 mph? ____________________ c. 40 mph? ______________________

b. 30 mph? ____________________ d. 50 mph? ______________________

2. Using the chart given to you, answer questions: If a car traveling at 60 mph travels 66 feet during reaction time of the driver, at 70 mph, how far will the car travel? ______________________________

3. How many more feet are required to stop when traveling at--

a. 40 mph as compared to 20 mph? _________________________________

b. 60 mph as compared to 30 mph? _________________________________

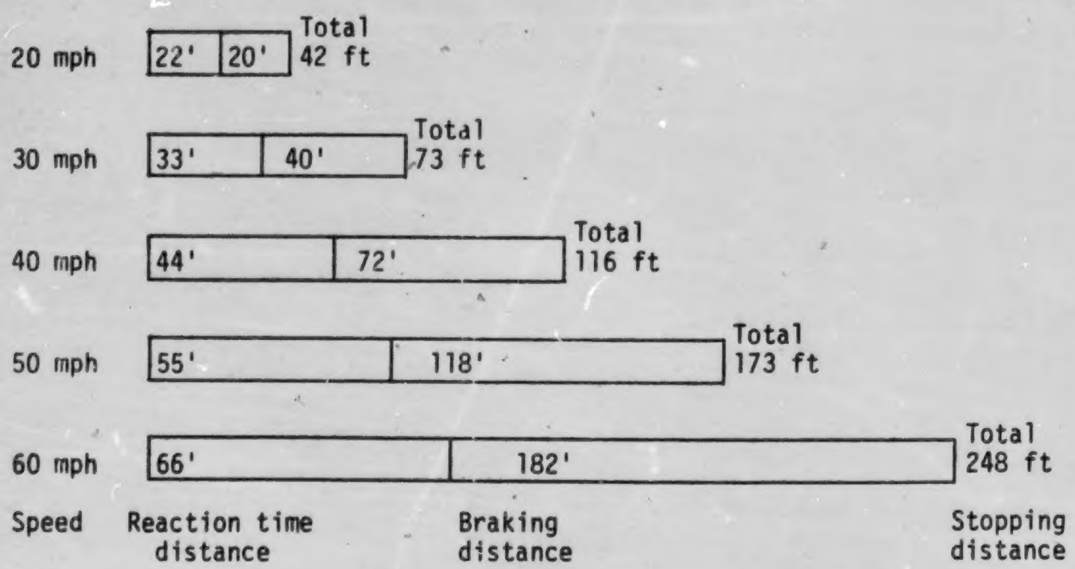
c. 50 mph as compared to 20 mph? _________________________________

d. 60 mph as compared to 40 mph? _________________________________

e. 50 mph as compared to 40 mph? _________________________________

ANSWER SHEET

SPEED, REACTION TIME, AND STOPPING DISTANCE - ENGLISH



Note to Teacher: The numbers in the chart are not direct equivalents of numbers used for miles per hour in the English system (i.e., 20 mph ≠ 30 km/h).

1. How far does the car travel during the reaction time at a speed of--

   a. 20 mph? (22 ft.)   c. 40 mph? (44 ft.)

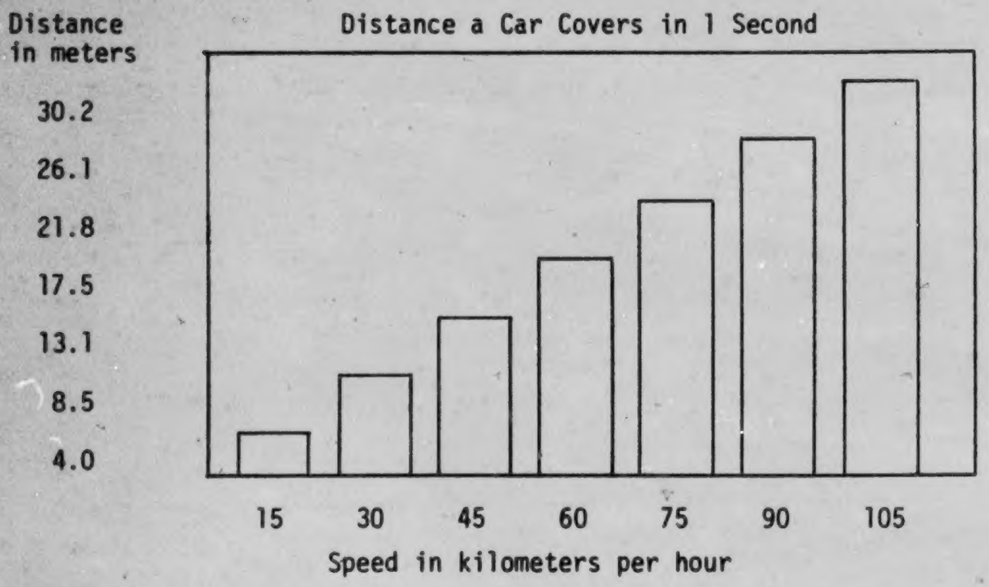
   b. 30 mph? (33 ft.)   d. 50 mph? (55 ft.)

2. Using the chart given to you, answer questions: If a car traveling at 60 mph travels 66 feet during reaction time of the driver, at 70 mph, how far will the car travel? (77 ft.)

3. How many more feet are required to stop when traveling at--

   a. 40 mph as compared to 20 mph? (74 ft.)
   b. 60 mph as compared to 30 mph? (175 ft.)
   c. 50 mph as compared to 20 mph? (131 ft.)
   d. 60 mph as compared to 40 mph? (132 ft.)
   e. 50 mph as compared to 40 mph? (57 ft.)

READING AND INTERPRETING BAR GRAPHS - METRIC



1. What does this graph show?

2. What is the title of the graph?

3. What do the numbers at the bottom indicate?

4. What do the numbers at the left show?

5. Which car travels the least distance in 1 second?

6. Which car travels the greatest distance in 1 second?

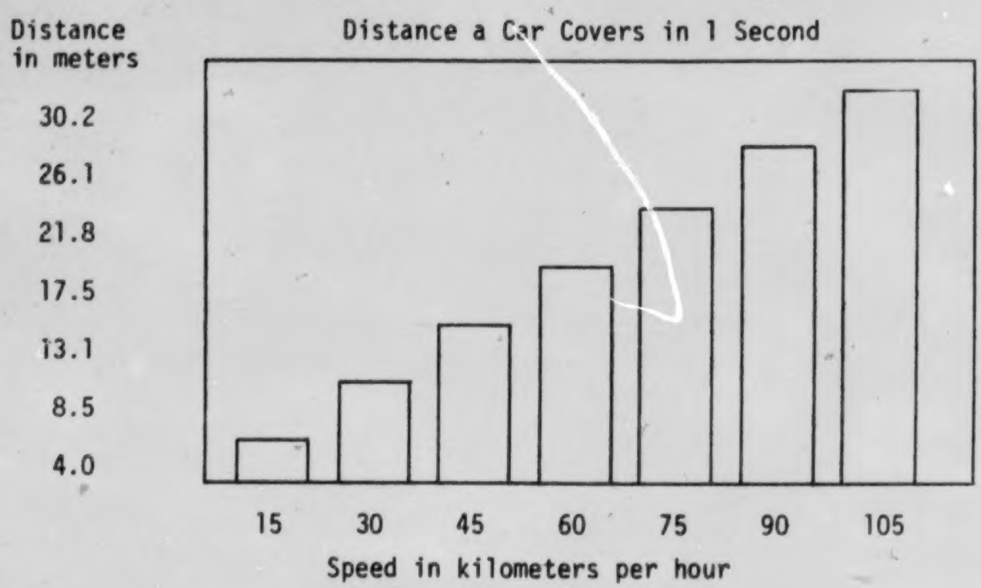
7. Traveling at 15 km/h, how much distance is covered in 1 second?

8. How much distance have you covered in 1 second traveling at 90 km/h?

9. If you doubled the distance you traveled at 45 km/h, how much distance would you cover?

ANSWER SHEET

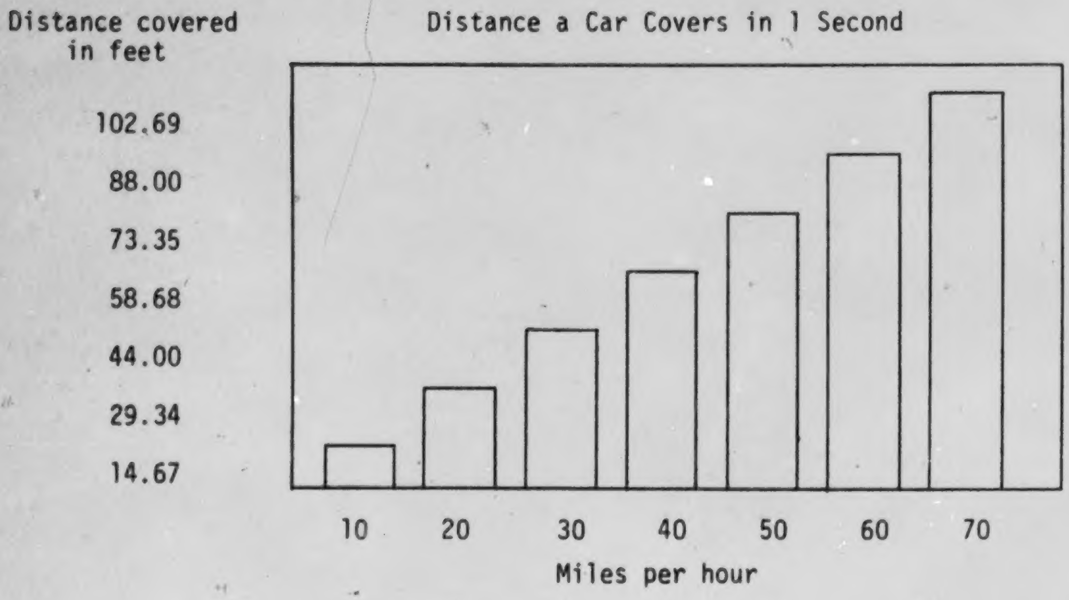
READING AND INTERPRETING BAR GRAPHS - METRIC



Note to teacher: The numbers in the chart are not direct equivalents of numbers used for miles per hour in the English system (i.e., 20 mph ≠ 30 km/h).

1. What does this graph show?
   (The distance a car travels in 1 second at various speeds)
2. What is the title of the graph? (Distance a Car Covers in 1 Second)
3. What do the numbers at the bottom indicate? (kilometers per hour)
4. What do the numbers at the left show? (distance covered in meters)
5. Which car travels the least distance in 1 second? (car going 15 km/h)
6. Which car travels the greatest distance in 1 second?
   (car going 105 km/h)
7. Traveling at 15 km/h, how much distance is covered in 1 second? (4.0 m)
8. How much distance have you covered in 1 second traveling at 90 km/h?
   (26.1 m)
9. If you doubled the distance you traveled at 45 km/h, how much distance would you cover? (26.1 m)

READING AND INTERPRETING BAR GRAPHS - ENGLISH



1. What does this graph show?

2. What is the title of the graph?

3. What do the numbers at the bottom indicate?

4. What do the numbers at the left show?

5. Which car travels the least distance in 1 second?

6. Which car travels the greatest distance in 1 second?

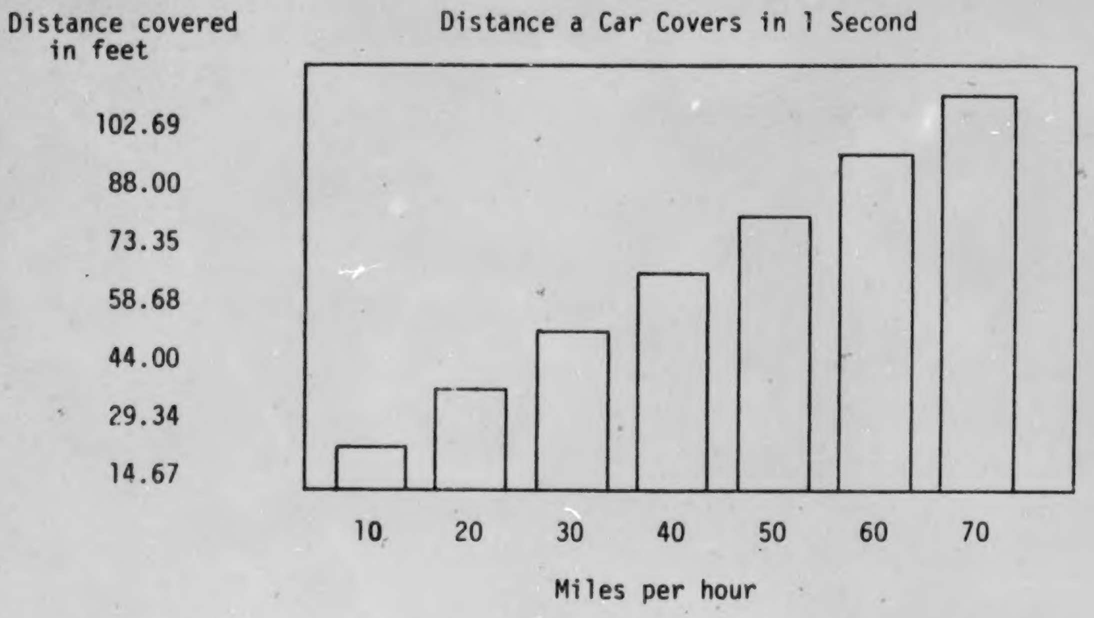
7. Traveling at 10 mph, how much distance is covered in 1 second?

8. How much distance have you covered in 1 second traveling at 60 mph?

9. If you doubled the distance you traveled at 30 mph, how much distance would you cover?

ANSWER SHEET

READING AND INTERPRETING BAR GRAPHS - ENGLISH



Note to teacher: The numbers in the chart are not direct equivalents of numbers used for miles per hour in the English system (i.e., 20 mph ≠ 30 km/h).

1. What does this graph show?
   (The distance a car travels in 1 second at various speeds)
2. What is the title of the graph? (Distance a Car Covers in 1 Second)
3. What do the numbers at the bottom indicate? (miles per hour)
4. What do the numbers at the left show? (distance covered in feet)
5. Which car travels the least distance in 1 second? (car going 10 mph)
6. Which car travels the greatest distance in 1 second?
   (car going 70 mph)
7. Traveling at 10 mph, how much distance is covered in 1 second?
   (14.67 feet)
8. How much distance have you covered in 1 second traveling at 60 mph?
   (88 feet)
9. If you doubled the distance you traveled at 30 mph, how much distance would you cover? (88 feet)

BAR GRAPH ACTIVITY - METRIC

Using the following information, plot a bar graph to show the relationships between speed, reaction time, braking distance, and stopping distance.

Speed (km/h)	Reaction Time Distance(m)	Braking Distance(m)	Stopping Distance(m)
105	21.9	75.3	97.3
90	18.9	53.4	72.3
75	15.6	34.1	49.7
60	12.5	22.0	34.2
45	9.5	12.5	22.0
30	6.1	6.4	12.5
15	3.1	2.4	5.5

BAR GRAPH ACTIVITY - ENGLISH

DIRECTIONS

Using the following information, plot a bar graph to show the relationships between speed, reaction time, braking distance and stopping distance.

MPH	REACTION	BRAKING	TOTAL
70	77'	304'	381'
60	66'	206'	272'
50	55'	133'	188'
40	44'	81'	125'
30	33'	45'	78'
20	22'	23'	45'
10	11'	9'	20'

SPEED-DISTANCE-TIME WORD PROBLEMS - METRIC

Refer to the table below to find the answers to the following questions.

Speed (km/h)	Distance in 1 Second (m)
105	30.2
90	26.1
75	21.8
60	17.5
45	13.1
30	8.5
15	4.0

1. How many meters will each car travel in 5 seconds?

Car A - 15 km/h ______________
Car B - 30 km/h ______________
Car C - 45 km/h ______________
Car D - 60 km/h ______________
Car E - 75 km/h ______________
Car F - 90 km/h ______________
Car G - 105 km/h______________

2. Which car traveled the longest distance? ________________________
Why? ____

3. Which car traveled the shortest distance? ________________________
Why? ____

Answer true or false to the following statements:

1. At 45 km/h a car would travel 26.1 meters in 2 seconds. ____________

2. A racing car traveling 200 km/h in 1 second is covering 60.4 meters. ________

3. A car traveling at 15 km/h in 10 seconds would cover more meters than a car traveling 90 km/h in 1 second. ________

4. A car that covered 8.5 meters in 1 second will have been traveling at 30 km/h. ________

ANSWER SHEET

SPEED-DISTANCE-TIME WORD PROBLEMS - METRIC

Refer to the table below to find the answers to the following questions.

Speed (km/h)	Distance in 1 Second (m)
105	30.2
90	26.1
75	21.8
60	17.5
45	13.1
30	8.5
15	4.0

Note to teacher: The numbers in the table are not direct equivalents of numbers used for miles per hour in the English system (i.e., 20 mph ≠ 30 km/h).

1. How many meters will each car travel in 5 seconds?

Car A - 15 km/h	(4.0)
Car B - 30 km/h	(8.5)
Car C - 45 km/h	(13.1)
Car D - 60 km/h	(17.5)
Car E - 75 km/h	(21.8)
Car F - 90 km/h	(26.1)
Car G - 105 km/h	(30.2)

2. Which car traveled the longest distance? (Car G)
   Why? (traveling faster)

3. Which car traveled the shortest distance? (Car A)
   Why? (traveling slower)

ANSWER SHEET (continued)

Answer true or false to the following statements:

1. At 45 km/h a car would travel 26.1 meters in 2 seconds. false

2. A racing car traveling 200 km/h in 1 second is covering 60.4 meters. true

3. A car traveling at 15 km/h in 10 seconds would cover more meters than a car traveling 90 km/h in 1 second. true

4. A car that covered 8.5 meters in 1 second will have been traveling at 30 km/h. true

SPEED-DISTANCE-TIME WORD PROBLEMS - ENGLISH

Refer to the table below to find the solutions to the following problems.

MILES PER HOUR	ONE SECOND
70	102.69 feet covered
60	88.00 feet covered
50	73.35 feet covered
40	58.68 feet covered
30	44.00 feet covered
20	29.34 feet covered
10	14.67 feet covered

1. How many feet will each car travel in 5 seconds?

   Car A - 10 mph ________
   Car B - 20 mph ________
   Car C - 30 mph ________
   Car D - 40 mph ________
   Car E - 50 mph ________
   Car F - 60 mph ________
   Car G - 70 mph ________

2. Which car traveled the farthest distance? ________

   Why? ______________________________

3. Which car traveled the shortest distance? ________

   Why? ______________________________

Answer TRUE or FALSE to the following questions.

1. At 30 mph a car would travel 87.00 feet in two seconds. TRUE or FALSE
2. A racing car traveling 140 miles per hour in one second is covering 205.38 feet. TRUE or FALSE
3. A car traveling at 10 miles per hour in 10 seconds would cover more feet than a car traveling 60 miles per hour in one second. TRUE or FALSE
4. A car that covered 29.34 feet in one second will have been traveling at 20 miles per hour. TRUE or FALSE

ANSWER SHEET

SPEED-DISTANCE-TIME WORD PROBLEMS - ENGLISH

Refer to the table below to find the solutions to the following problems.

MILES PER HOUR	ONE SECOND
70	102.69 feet covered
60	88.00 feet covered
50	73.35 feet covered
40	58.68 feet covered
30	44.00 feet covered
20	29.34 feet covered
10	14.67 feet covered

1. How many feet will each car travel in 5 seconds?

Car A - 10 mph *(73.35)*
Car B - 20 mph *(146.70)*
Car C - 30 mph *(220.00)*
Car D - 40 mph *(293.40)*
Car E - 50 mph *(366.75)*
Car F - 60 mph *(440.00)*
Car G - 70 mph *(513.45)*

2. Which car traveled the farthest distance? *(Car G)*
Why? *(traveling faster)*

3. Which car traveled the shortest distance? *(Car A)*
Why? *(traveling slower)*

Answer TRUE or FALSE to the following questions.

1. At 30 mph a car would travel 87.00 feet in two seconds. TRUE or [✓ FALSE]
(88 ft.)

2. A racing car traveling 140 miles per hour in one second is covering 205.38 feet. [✓ TRUE] or FALSE

3. A car traveling at 10 miles per hour in 10 seconds would cover more feet than a car traveling 60 miles per hour in one second. [✓ TRUE] or FALSE

4. A car that covered 29.34 feet in one second will have been traveling at 20 miles per hour. [✓ TRUE] or FALSE

SPEED-DISTANCE-TIME WORD PROBLEMS - METRIC

Refer to the table to find answers to the following questions.

Travel Time (Seconds)	Speed of travel (km/h)						
	15	30	45	60	75	90	105
1	4.0	8.5	13.1	17.5	21.8	26.1	30.2
2	8.0	17.0	26.2	35.0	43.6	52.2	60.4
3	12.0	25.5	39.3	52.5	65.4	78.3	90.6
4	16.0	34.0	52.4	70.0	87.2	104.4	120.8
5	20.0	42.5	65.5	87.5	109.0	130.5	151.0
6	24.0	51.0	78.6	105.0	130.8	156.6	181.2
7	28.0	59.5	91.7	122.5	152.6	182.7	211.4
8	32.0	68.0	104.8	140.0	174.4	208.8	241.6
9	36.0	76.5	117.9	157.5	196.2	234.9	271.8
10	40.0	85.0	131.0	175.0	218.0	261.0	302.0

1. Mr. Jones is driving 45 km/h. In 1 second he travels 13.1 meters. How many meters will he travel in 10 seconds? ____________________

2. Mr. Baker can travel 26.1 meters in 1 second at 90 km/h. How many seconds will it take him to travel 104.4 meters? ________________

3. Mrs. Smith traveled 1 second going 15 km/h and Mrs. Elliot traveled 1 second going 45 km/h. Which one traveled the longest distance and how much farther did she go? ________________________________

4. Car A travels 15 km/h for 6 seconds and Car B travels 60 km/h for 2 seconds. Which car traveled the longest distance? _______________

5. What is the average distance covered if a car traveled 2 seconds at 45 km/h, 5 seconds at 90 km/h, 6 seconds at 30 km/h, and 1 second at 105 km/h? ____

ANSWER SHEET

SPEED-DISTANCE-TIME WORD PROBLEMS - METRIC

Refer to the table to find answers to the following questions.

Travel Time (Seconds)	Speed of travel (km/h)						
	15	30	45	60	75	90	105
1	4.0	8.5	13.1	17.5	21.8	26.1	30.2
2	8.0	17.0	26.2	35.0	43.6	52.2	60.4
3	12.0	25.5	39.3	52.5	65.4	78.3	90.6
4	16.0	34.0	52.4	70.0	87.2	104.4	120.8
5	20.0	42.5	65.5	87.5	109.0	130.5	151.0
6	24.0	51.0	78.6	105.0	130.8	156.6	181.2
7	28.0	59.5	91.7	122.5	152.6	182.7	211.4
8	32.0	68.0	104.8	140.0	174.4	208.8	241.6
9	36.0	76.5	117.9	157.5	196.2	234.9	271.8
10	40.0	85.0	131.0	175.0	218.0	261.0	302.0

Note to teacher: The numbers in the table are not direct equivalents of numbers used for miles per hour in the English system (i.e., 20 mph ≠ 30 km/h).

1. Mr. Jones is driving 45 km/h. In 1 second he travels 13.1 meters. How many meters will he travel in 10 seconds? *(85.0 m)*
2. Mr. Baker can travel 26.1 meters in 1 second at 90 km/h. How many seconds will it take him to travel 104.4 meters? *(4 seconds)*
3. Mrs. Smith traveled 1 second going 15 km/h and Mrs. Elliot traveled 1 second going 45 km/h. Which one traveled the longest distance and how much farther did she go? *(Mrs. Elliot; 9.1 m)*
4. Car A travels 15 km/h for 6 seconds and Car B travels 60 km/h for 2 seconds. Which car traveled the longest distance? *(Car B)*
5. What is the average distance covered if a car traveled 2 seconds at 45 km/h, 5 seconds at 90 km/h, 6 seconds at 30 km/h, and 1 second at 105 km/h? *(59.48 kilometers per second)*

SPEED-DISTANCE-TIME WORD PROBLEMS - ENGLISH

Refer to the table to find solutions to the following problems.

SECONDS	10 MPH	20 MPH	30 MPH	40 MPH	50 MPH	60 MPH	70 MPH
1	14.67	29.34	44	58.68	73.35	88	102.69
2	29.34	58.68	88	117.36	146.70	176	205.38
3	44.01	88.02	132	176.04	220.05	264	308.07
4	58.68	117.36	176	234.72	293.40	352	410.76
5	73.35	146.70	220	293.40	366.75	440	513.45
6	88.02	176.04	264	352.08	440.10	528	616.14
7	102.69	205.38	308	410.76	513.45	616	718.83
8	117.36	234.72	352	469.44	586.80	704	821.52
9	132.03	264.06	396	528.12	660.15	792	924.21
10	146.70	293.40	440	586.80	733.50	880	1,026.90

1. Mr. Jones is driving 30 miles per hour. In one second he travels 44 feet. How many feet will he travel in 10 seconds?

2. Mr. Baker can travel 88 feet in one second driving 60 miles per hour. How many seconds will it take him to travel 352 feet?

3. Mrs. Smith traveled one second going 10 miles per hour and Mrs. Elliott traveled one second going 30 miles per hour. Which one traveled the most distance and how much farther did she go?

4. Car A travels 10 miles per hour for 6 seconds and Car B travels 40 miles per hour for 2 seconds. Which car has traveled the most distance?

5. What is the average distance covered if a car traveled two seconds at 30 miles per hour, 5 seconds at 60 miles per hour, 6 seconds at 20 miles per hour, and one second at 70 miles per hour?

ANSWER SHEET

SPEED-DISTANCE-TIME WORD PROBLEMS - ENGLISH

Refer to the table to find solutions to the following problems.

SECONDS	10 MPH	20 MPH	30 MPH	40 MPH	50 MPH	60 MPH	70 MPH
1	14.67	29.34	44	58.68	73.35	88	102.69
2	29.34	58.68	88	117.36	146.70	176	205.38
3	44.01	88.02	132	176.04	220.05	264	308.07
4	58.68	117.36	176	234.72	293.40	352	410.76
5	73.35	146.70	220	293.40	366.75	440	513.45
6	88.02	176.04	264	352.08	440.10	528	616.14
7	102.69	205.38	308	410.76	513.45	616	718.83
8	117.36	234.72	352	469.44	586.80	704	821.52
9	132.03	264.06	396	528.12	660.15	792	924.21
10	146.70	293.40	440	586.80	733.50	880	1,026.90

1. Mr. Jones is driving 30 miles per hour. In one second he travels 44 feet. How many feet will he travel in 10 seconds?

   (440 ft.)

2. Mr. Baker can travel 88 feet in one second driving 60 miles per hour. How many seconds will it take him to travel 352 feet?

   (4 seconds)

3. Mrs. Smith traveled one second going 10 miles per hour and Mrs. Elliott traveled one second going 30 miles per hour. Which one traveled the most distance and how much farther did she go?

   (Mrs. Elliott; 29.33 ft.)

4. Car A travels 10 miles per hour for 6 seconds and Car B travels 40 miles per hour for 2 seconds. Which car has traveled the most distance?

   (Car B)

5. What is the average distance covered if a car traveled two seconds at 30 miles per hour, 5 seconds at 60 miles per hour, 6 seconds at 20 miles per hour, and one second at 70 miles per hour?

   (201.68 ft. per second)

CONSTRUCTING BAR GRAPHS - METRIC

Given the information below, construct a bar graph. As you construct your bar graph, keep in mind the following questions:

1. What shall you label each axis?
2. What scale shall you use?
3. How many spaces will you need?
4. How will you make the vertical and horizontal axes intersect?
5. How can you plan for the bars to be the same width and the spaces the same distance apart?
6. How will you decide upon the size of the graph?

Speed (km/h)	Travel Time (Seconds)
105	30.2
90	26.1
75	21.8
60	17.5
45	13.1
30	8.5
15	4.0

Answer the following questions when you have completed your graph:

1. What does this graph show? ______________________________

____

2. What is the title of the graph? ___________________________

3. What do the numbers at the bottom indicate? ________________

4. What do the numbers at the left show? _____________________

5. Which car travels the least distance in 1 second? ____________

____

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6. Which car travels the greatest distance in 1 second? ______________

____

7. How many kilometers per hour can you travel in 1 second? __________

____

8. How much distance have you covered in 1 second traveling at 90 km/h?

____

ANSWER SHEET

CONSTRUCTING BAR GRAPHS - METRIC

Speed (km/h)	Travel Time (Seconds)
105	30.2
90	26.1
75	21.8
60	17.5
45	13.1
30	8.5
15	4.0

Note to teacher: The numbers in the table are not direct equivalents of the numbers used for miles per hour in the English system (i.e., 20 mph ≠ 30 km/h)

Answer the following questions when you have completed your graph:

1. What does this graph show? (distance a car travels in 1 second at various speeds)
2. What is the title of the graph? (will vary)
3. What do the numbers at the bottom indicate? (will vary)
4. What do the numbers at the left show? (will vary)
5. Which car travels the least distance in 1 second? (car going 15 (km/h)
6. Which car travels the greatest distance in 1 second? (car going 105 (km/h)
7. How many kilometers per hour can you travel in 1 second? (varies according to distance traveled and speed)
8. How much distance have you covered in 1 second traveling at 90 km/h? (26.1 m)

CONSTRUCTING BAR GRAPHS - ENGLISH

Given the information below, construct a bar graph. As you construct your bar graph, keep in mind the following questions:

1. What shall you label each axis?
2. What scale shall you use?
3. How many spaces will you need?
4. How will you make the intersection of the vertical and horizontal axes?
5. How can you plan so that the bars are the same width and the spaces are the same distance apart?
6. How will you decide upon the size of the graph?

Miles Per Hour	One Second
70	102.69
60	88.00
50	73.35
40	58.68
30	44.00
20	29.34
10	14.67

Answer the following questions when you have completed your graph:

1. What does this graph show?
2. What is the title of the graph?
3. What do the numbers at the bottom indicate?
4. What do the numbers at the left show?
5. Which car travels the least distance in one second?
6. Which car travels the greatest distance in one second?
7. How many miles per hour can you travel in one second?
8. How much distance have you covered in one second traveling at 60 miles per hour?

ANSWER SHEET

CONSTRUCTING BAR GRAPHS - ENGLISH

Given the information below, construct a bar graph. As you construct your bar graph, keep in mind the following questions:

1. What shall you label each axis?
2. What scale shall you use?
3. How many spaces will you need?
4. How will you make the intersection of the vertical and horizontal axes?
5. How can you plan so that the bars are the same width and the spaces are the same distance apart?
6. How will you decide upon the size of the graph?

Miles Per Hour	One Second
70	102.69
60	88.00
50	73.35
40	58.68
30	44.00
20	29.34
10	14.67

Answer the following questions when you have completed your graph:

1. What does this graph show? *(distance a car travels in one second at various speeds)*
2. What is the title of the graph? *(will vary)*
3. What do the numbers at the bottom indicate? *(will vary)*
4. What do the numbers at the left show? *(will vary)*
5. Which car travels the least distance in one second? *(car going 10 MPH)*
6. Which car travels the greatest distance in one second? *(car going 70 MPH)*
7. How many miles per hour can you travel in one second? *(varies according to distance traveled and speed)*
8. How much distance have you covered in one second traveling at 60 miles per hour? *(88 ft.)*

BICYCLE SAFETY - LEVEL C

CONCEPT V: NATURAL LAWS - PART D - VISUAL LIMITATIONS

OBJECTIVE

The student will identify visual limitations of pedestrians, automobile drivers, and bicyclists.

CONTENT FOR DISCUSSION

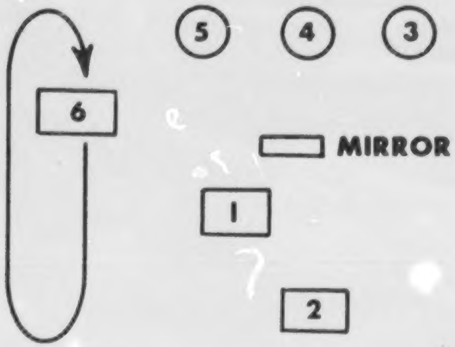
The automobile driver, pedestrian, and bicyclist have visual limitations. There are areas to each side and behind which cannot be seen when a person is looking straight ahead. That is why a person should constantly scan for danger. A person in the traffic environment has to be aware of many factors at one time; sometimes, so many factors are involved at one time that the individual cannot respond to all of them. This situation can lead to accidents. The design of a vehicle often limits the driver's ability to see. A car has certain areas on each side where the driver cannot see because a part of the car blocks his vision. The bicyclist's vision is limited because the bicycle does not have mirrors, so he must turn his head to see traffic behind him. The pedestrian's vision can be blocked by parked cars or an oncoming lane of traffic.

ACTIVITIES

1. Traffic Circles. To illustrate the visual and coordination problems of a bicycle driver or auto driver in a traffic environment, divide the class into two groups. Form two circles, one within the other. The outer circle moves clockwise, the inner circle moves counterclockwise. Use four volleyballs in play. Then use four tennis balls. The balls will be passed in two ways.
   a. When you call "pass back," the balls will be passed over the head to the person moving behind in the same circle.
   b. When you call "pass over," the balls will be tossed to the person opposite in the other circle.

Discuss the game after playing. Liken the situation to a traffic environment. The big volleyballs are easier to see and catch, the smaller balls are harder to see and catch. The volleyballs correspond to cars, the smaller balls to bicyclists or pedestrians. To make this game more difficult, darken the room while playing. Introduce a day-glo tennis ball. Is it easier to catch?

2. Distraction. To give the student some idea of the driving task and to develop his scanning technique, put the student in the driver's "hot seat" in this game. The student must identify the different factors involved in the driving task within the allotted time period, or he will "wreck." Five students will represent the different factors and will take the positions indicated in the diagram. A rearview mirror is needed and should be placed or held at the correct height. (Contact local car dealers, junk car dealers, etc., for donation of mirror.)



Number 1 represents the seated driver. Number 2 represents a rear car; the student in this position tries to sneak up and touch the driver without being seen. Number 3 represents a bicyclist, who will give hand signals occasionally which must be identified within 5 seconds. (Count by one thousand one . . . .). Number 4 represents road factors; the student in this position will hold up squares of green, yellow, and red which the driver must identify. Number 5 represents a crisis factor; the student in this position will hold up a red sign periodically, and the driver must say "emergency" within 3 seconds. Number 6 represents an oncoming car; the student will make a circle in the classroom and the driver must say "now" when the car passes him. If the driver fails to identify any of these traffic factors, he will take position number 6 and everyone moves up a position.

BICYCLE SAFETY - LEVEL C

CONCEPT VI: A BICYCLE IS A VEHICLE

OBJECTIVE

The student will be able to identify the Rules of the Road which pertain to the bicycle as a vehicle.

CONTENT FOR DISCUSSION

A bicycle is a vehicle, and a bicyclist must obey all the traffic laws and rules that a motorist must obey. He is responsible for avoiding injury to himself and to others. The bicyclist is required to:

1. Obey Traffic Signs, Signals, and Markings. The bicyclist should exercise care when turning right on red where permitted. According to the law, one must come to a complete halt and turn only if there is no oncoming traffic in the street that one wishes to enter.
2. Use Hand Signals. To signal a left turn, the bicyclist extends his left arm and hand horizontally. To signal a right turn, the bicyclist extends left arm with his forearm and hand pointed upward. The bicyclist should give signals before turning--not while turning--because both hands are needed on the handlebars to maintain stability. The signal for slowing or stopping is to extend the left arm with the hand and arm pointed downward.
3. Yield to Pedestrians.
4. Drive on the Right, with Traffic. The bicyclist should not "hog" the road. Drive close to the right-hand edge of the road and allow cars to pass.
5. Drive a Bicycle Equipped with Light and Reflector. The light should be visible from at least 90 meters (300 feet) in front of the bicycle, and a reflector should be visible from at least 60 meters (200 feet) to the rear when used at night. This law was passed to protect bicycle drivers. A nighttime bicycle accident has a greater probability of serious or fatal injury than a daylight accident. Bicyclists can make themselves seen at dusk, at night, or in bad weather

by wearing white, bright, or reflective clothing and by placing reflectorized tape on different parts of their bicycles.

6. Never Carry More Passengers than the Bicycle Is Designed for. Passengers obstruct the driver's vision, make balancing difficult, and increase stopping distances. "Banana" seats are not designed to carry two people.
7. Obey Local Ordinances. Local or county as well as State ordinances regulate the operation of bicycles. They may designate areas where bicycles may be driven or ridden, or they may require that bicycles be licensed.

ACTIVITIES

1. Film for Discussion. Just Like A Car, Film Loops, Inc. (See resource list for further information and other related films.)
2. Hand Talk. Demonstrate hand signals and give the students an opportunity to practice them. For fun and to reinforce right-left knowledge, have students choose partners. Facing each other, have them raise their right hands simultaneously, then their left hands. This activity may be done back to back or front to back. The students may also test themselves by playing "Simon Says," with hand signals.
3. Riding with the Traffic. Discuss why bicyclists should ride with the traffic. Point out that when riding with the traffic, cars can slow down and pass the bicycle when the road is clear.

   If you were driving a car and you had to choose between hitting an oncoming car and hitting an oncoming bicycle, what would you do?
4. Think about These.[1,9] Describe the situations to the students and ask them what they would do or say:
   a. Suppose you have stopped your bicycle for a red light at an intersection, the light has changed to green, it is your signal to go, and a pedestrian is in the middle of the crosswalk in front of you. What would you do? Would you say anything?
   b. Suppose you are riding with your mother in the car. Suddenly she discovers that her directional signals do not work. What would you suggest she do?

c. Suppose you are driving your bicycle and notice that drivers of other vehicles are looking and pointing at you. Some of them are beeping their horns as well. How many different reasons can you give for this happening? If it were actually you driving, which reason would be the most likely? What would you do?

5. You Be the Judge.[1,9] Read or have the students read the following situations and answer the questions orally or in writing.

a. Carl Jenkins was driving his bicycle to school. There was a lot of traffic. Carl had promised his teacher he would come to school early to help her set up a science experiment that he wanted to show to the class. He had started late, though, and felt that he had to hurry. A school bus in front of Carl was making him especially annoyed. It kept stopping and starting to pick up children. Carl decided school buses were a real pain to follow. So, he suddenly passed the school bus on the left when it stopped to pick up some children. The bus driver yelled at Carl, "Hey, that's not very smart!" Do you agree with the bus driver? What could have happened? What does the law say about passing a school bus? What else could Carl have done in this situation? What would you have done?

b. Jim was on his way home from school. He had played catch with a friend and was a little late in starting home. He knew his mom would be worried about him. Jim followed all the rules and signals as he drove his bicycle. While approaching a green light, Jim heard the sound of a siren. Instead of going through the light, he immediately pulled over to the right-hand side of the street, even though he could not actually see a police car, ambulance, or fire truck. Did Jim do the correct thing? Why or why not? What would you have done?

c. Mrs. Boyle was an elderly lady. One day she was crossing in the crosswalk. Tony Marco was approaching the crosswalk on his bicycle. He thought he could get across before Mrs. Boyle got there. He sped up, but suddenly realized that he might run into the lady. He tried to slow down, but found that his brakes were not holding. As he came toward Mrs. Boyle, she saw him and tried to jump out of the way. In doing so, she slipped and fell. Was Tony responsible for Mrs. Boyle's falling down? Why did Tony want to get across the crosswalk without stopping for Mrs. Boyle in the first place? What else could he have done? What would you have done? If you had been Tony in the story, what would you have done next?

d. The signal light turned green. Louise Mack prepared to start her bicycle moving. Then she saw a blind man start to cross the street in front of her. Louise assumed that the blind man would hear the traffic and would stop and wait. But as Louise started driving ahead, she realized that the blind man was continuing to cross against the traffic. Louise stopped just in time to avoid hitting him. It looked as if the car next to Louise did not see the blind man coming, though. If you were Louise, what would you do next? What else could Louise have done to help prevent an accident? If you had been Louise, would you have felt annoyed with the blind man? Would you have said anything to him?

6. Bicycle License. Have the students discuss why some cities require that bicycles be licensed. Have them decide if licensing would be a good idea for their community. Are there any ordinances which you feel should be passed? For example, riding or not riding on sidewalks. Students may contact the local police department for information about existing local laws.

7. Accident Prone. Accidents are most likely to occur where there is some kind of intersection--an alley, a driveway, or two road crossings. The driver of the motor vehicle is rarely considered at fault. Have students give possible causes of accidents at intersections--for example, improper turns; loss of balance, disregarding traffic signs, signals, and markings; riding up on the right of cars stopped at intersections.

8. Turning Left-Right.[2] Ask students: "If a bicycle driver is supposed to ride as close to the right curb as possible, how is he expected to make a left turn?" The National Safety Council suggests that, when turning left at intersections, "a bicyclist should dismount and follow the pedestrian crosswalk to the far right corner, and then proceed at right angles. In this way he crosses one direction of traffic at a time.

9. Class Discussion. Discuss with students:
   a. Why is night riding dangerous?
   b. What would prevent you from being seen by a car driver even though he has bright lights?
   c. How can you help the car driver see you?

10. Creative Dramatics.[4] Ask the students to dramatize a situation in which the governing body of the community is trying to decide what to do about the bicycle problem. You may present the situation in the form of a newspaper story patterned after this example:

CITY COUNCIL TO STUDY BIKE LAW

> The city council will decide in its meeting tonight what kind of bicycle law the city should have.
>
> The growing number of bicycle drivers in the community has caused problems in traffic areas, according to Mayor John White. "Many cyclists have caused accidents because they do not follow rules," the mayor said. Council members will hear suggestions about the proposed law from traffic experts and interested citizens.

   a. Students should determine who "traffic experts" and "interested citizens" are. (They might include policemen, town planners, school officials, parents, bicycle club members, and children.) Students should discuss what suggestions might be made. For example, a policeman might suggest that bicycles be allowed to be driven only on certain streets, and a bike club member might add that those streets should be clearly marked as bicycle routes so motor vehicles would be alert for bicycle traffic.

Discuss the need to develop a law that the majority believes is fair to both cyclists and other users of the traffic system. Why would such a law work better than one that was written without considering different points of view?

b. Select volunteers to play the roles of mayor, councilmen, experts, and interested citizens. Begin the dramatization with the understanding that it will be stopped at a specific time and continued another day. (The continuation can be used as a culminating activity after students have experienced formulating bicycle rules.)

BICYCLE SAFETY - LEVEL C

CONCEPT VII: KNOW YOUR BICYCLE

OBJECTIVE

The student will be able to identify the parts of a bicycle and to explain how to take care of a bike.

CONTENT FOR DISCUSSION

The bicyclist should be able to locate the following parts:

- bell or horn
- brakes (coaster or hand)
- chain
- chain guard
- chain wheel (sprocket)
- chain wheel bearings
- fenders
- forks
- fork bearings
- frame
- front light
- handlebars
- handle grips
- pedals
- pedal bearings
- reflectors
- seat or saddle
- spokes
- tires
- wheels
- wheel bearings

Regularly recheck these bicycle parts:

1. Handlebars and Seat. Both should be tight, secure, and of the proper height. The grips should be cemented tightly.
2. Tires and Spokes. Tires should be checked once a week for the correct air pressure (usually written on the sidewalls). Check the tires often for cuts, worn areas, imbedded glass, pebbles, or metal. Alternating the tires every 320 kilometers (200 miles) will make the tires last longer. Check the tightness and condition of the spokes.
3. Fork, Sprocket, and Pedals. The front fork, sprocket, sprocket bearings, and wheel bearings should be oiled regularly. The pedal bearings can be oiled by unscrewing the dustcap on the end and loosening the locknut and core; the end next to the crank should be oiled too. Pedals should be replaced if damaged.
4. Chain. The chain should be oiled regularly. The chain should have a slack of about 2 centimeters (1/2 to 3/4 inch). Links should be checked for wear. If the chain becomes dirty, remove it by locating

the master link and bending the chain toward you on both sides of this link until the sidebar is released. Soak the chain several hours in kerosene. Then give the chain a similar bath in oil, and wipe thoroughly before replacing. Oil the chain along the sides to lubricate the centers of the rollers. (The students should be warned to be careful when using kerosene.)

5. Brakes. The brakes should work smoothly and evenly. If the bicycle has hand brakes, keep the sides of wheel rims free of dirt, oil, and wax. Check nuts and bolts to make sure they are tight.
6. Frame and Fenders. The frame should be kept clean. Rub the chrome or nickel-plated parts with an oily rag to keep them from rusting. Use a cleaner or wax on the painted parts as part of a regular safety check.[2]
7. Light, Reflector, and Bell. These should work properly.

The bicyclist should take his bicycle to a bicycle dealer for all major repairs.

When the bicycle is not being used, it should be locked and left in an upright position either in a rack or by using the kickstand. Laying it on its side damages the bike. Bikes should be left in a place where they will not disrupt pedestrian or vehicular traffic.[2]

ACTIVITIES

1. Build a Bike. Using the masters for reproduction #8-#12 (pp. 175-179). discuss the parts of a bicycle, their functions, and how to care for each part.
2. Working Bulletin Board. Place the master for reproduction #13, "The Unlabeled Bike" (p.180), on the overhead projector and increase the size of the picture until it will fit a bulletin board. Draw lines from parts of the bike and make labels for each part. Have students place the labels on the board in the correct places. (Labels for bike parts are found on master for reproduction #14, p. 181.)
3. Bicycle Parts Riddles. Write the name of bicycle parts on slips of paper, and have the students draw slips out of a box without looking. Each student will make up a riddle about a part to present to the

class. For example: I am straight and very thin, and there are many of me on a bicycle. Who am I? (Answer: a spoke.) The class can divide up into two teams. The team gets a point when a member guesses the part.

4. Film for Discussion. Your Safety Adventures in Traffic, Part II. Check for appropriate grade level; it may be too elementary. (See resource list for more information on this and other related films.)

5. Bicycle Maintenance.[4] Invite a bicycle mechanic to visit the class (or take the class to a bicycle shop) to hear from experts how to maintain a bike and how to make simple repairs. If possible, students should be given a chance to practice doing inspection and minor repairs themselves. Following the visit, ask the students to describe what they can fix and what they should take to the bicycle shop. The students may wish to write stories and draw pictures of bicycles being repaired. They might also prepare demonstrations of what they learned for parent meetings or other classes.

6. Bicycle Demonstration. Have a student bring a bike to class to demonstrate the safety checks which should be made regularly.

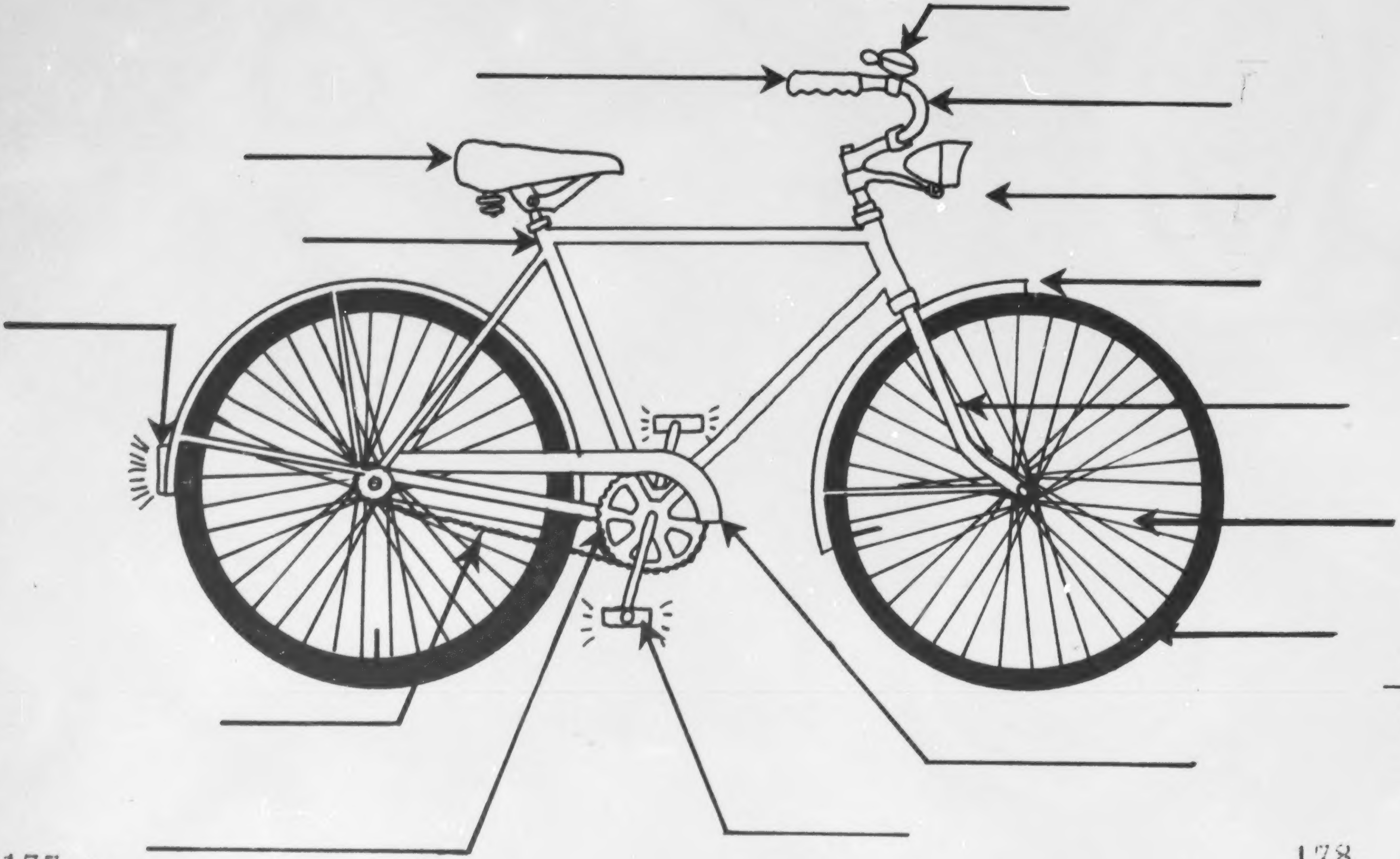
7. Safety Check Your Bike. Have students develop a list of checks which should be made before driving. The list could include checking the chain, brakes, handlebars, wheels, and saddle. Compare with master for reproduction #15, Safety Check Your Bike (p. 182). Have the students check their bikes at home, using either checklist. What hazards can result from not checking your bike regularly?

8. Safety Survey. Have students take a survey of other classrooms to determine whether safety checks are made regularly and what parts are checked on students' bikes. Have students design a mod safety check brochure which may be taken home or distributed to a younger grade.

9. Bike Clinic. Involve the PTA or your students in setting up a bike clinic for a schoolwide bike safety check.

10. Checklist for Safety. Have students design a checklist with slogans on posters to be put up at bicycle racks and exits to remind other students to check their bikes before driving. The posters could show humorous cartoon characters who forgot to check their bikes.

11. Student Teachers. Students can create a play or puppet show to be presented to a lower class on the parts of the bike and how to check a bike for safety.



Bell

Handlegrips

Handlebars

Saddle

Front Light

Frame

Fender

Reflector

Fork

Spokes

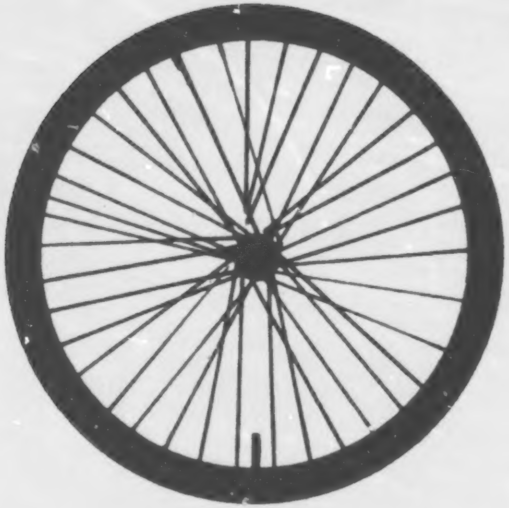
Tire

Chain

Chain Guard

Chain Wheel
(Or Sprocket)

Pedals



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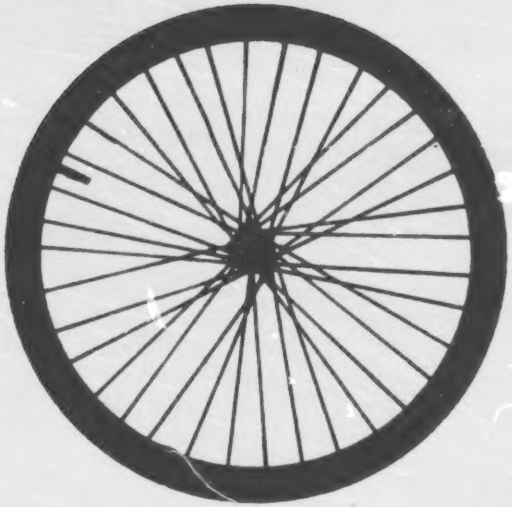

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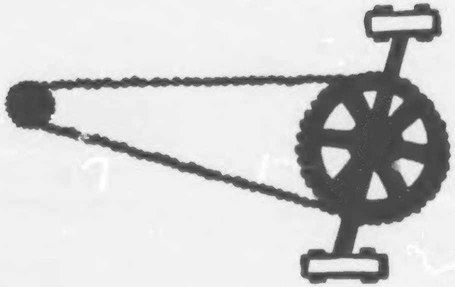

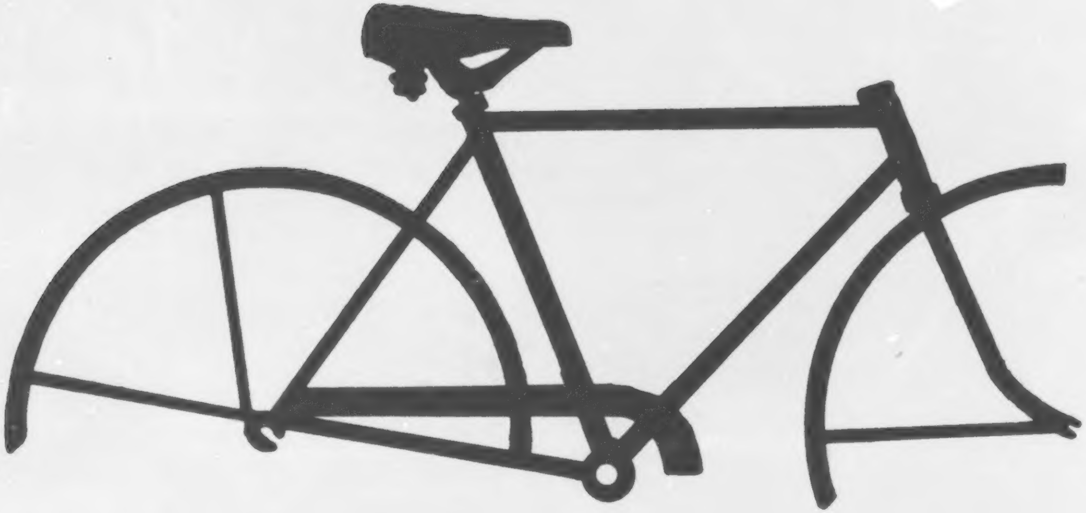

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Safety Check Your Bike

1. _____WHEELS
   Are they straight?
   Do they wobble?
2. _____SPOKES
   Are any bent or broken?
   Are any loose?
3. _____TIRES
   Do they feel firm?
   Are they wearing out?
   Is the tread clean?
4. _____PEDALS
   Are they wearing out?
5. _____CHAIN WHEEL(OR SPROCKET)
   Is it bent or damages?
6. _____CHAIN
   Is it snug?
   Are there any broken or damaged links?
7. _____BRAKES(COASTER OR HAND)
   Do they stop bike fast and smoothly?
8. _____FRAME, FENDER, FORK
   Are they straight?
   Do they rub any other part of the bike?
   Are the nuts and bolts tight?
9. _____CHAIN GUARD
   Is it bent?
10. _____SEAT(OR SADDLE)
    Is it tight?
    Is the height comfortable for you?
    Is it level with the ground?
11. _____HANDLEBARS
    Are they tight?
    Is the height comfortable fot you?
    Are the handgrips tight?
12. _____BELL OR HORN
    Does it sound loud and clear?
13. _____FRONT LIGHT
    Can it be seen from 90m(300') away?
14. _____REFLECTORS
    Are they clean?
    Can they be seen from 60m(200')?

BICYCLE SAFETY - LEVEL C

CONCEPT VIII: DRIVE A BIKE THAT FITS

OBJECTIVES

1. The student will be able to explain why a bicyclist should drive a bike that fits his size and driving needs.
2. The student will be able to describe how to tell if a bike fits a rider.

CONTENT FOR DISCUSSION

In order to be a safe driver, the bicyclist should drive a bike that fits. A bicycle that is fitted correctly to the individual is not only safer but also easier to drive since all the muscles work together. One way of determining if a bike is the proper size is to make sure that when the biker is seated one leg is almost straight when the ball of the foot is on the pedal in its lowest position. The seat should be raised or lowered until the leg is almost straight. The biker should also be able to sit squarely on the saddle and grasp the handlebars easily. When straddling the bike, the bicyclist's feet should be flat on the ground.

The bicyclist should drive a bike that fits his needs. The most common styles are the lightweight touring, the middleweight, and the high-rise. Lightweight bicycles are built for serious transportation. They are light, fast, and easy to pedal. There are many models with many different features. They are good for both long and short trips.

Middleweight bicycles are often equipped with handbrakes and three speeds. The middleweight is tough and sturdy, yet easy to drive. It comes in different frame and wheel sizes to fit adults and older boys and girls.

High-rise bicycles are designed for fun. Some models have one- to five-speed gears, foot or hand brakes, and many extras. They are different from other bikes because of the small wheels, long saddle, and the high position of the handlebars.

When buying a bike, one should also check for accessories. The bike should have a reflector and a lamp which are visible from distances of

60 and 90 meters (200 and 300 feet), respectively. If you ride a bike at night, lights and reflectors are required by law. The bike should be equipped with a bell or horn, a mud guard, and a chain guard. A carrier or basket is also a useful accessory.

ACTIVITIES

1. Local Pro. Invite the owner or salesman of a local bicycle shop to talk to the class about the different types of bicycles and how to choose one that fits the individual's size and driving needs. Most bike shop owners will probably be glad to bring a bicycle to demonstrate for the class. If no one can come to the class, have students who own the different kinds of bikes bring their bikes to class. Use master for reproduction #16, Lightweight, Middleweight, High-Rise (p. 186), for discussion.

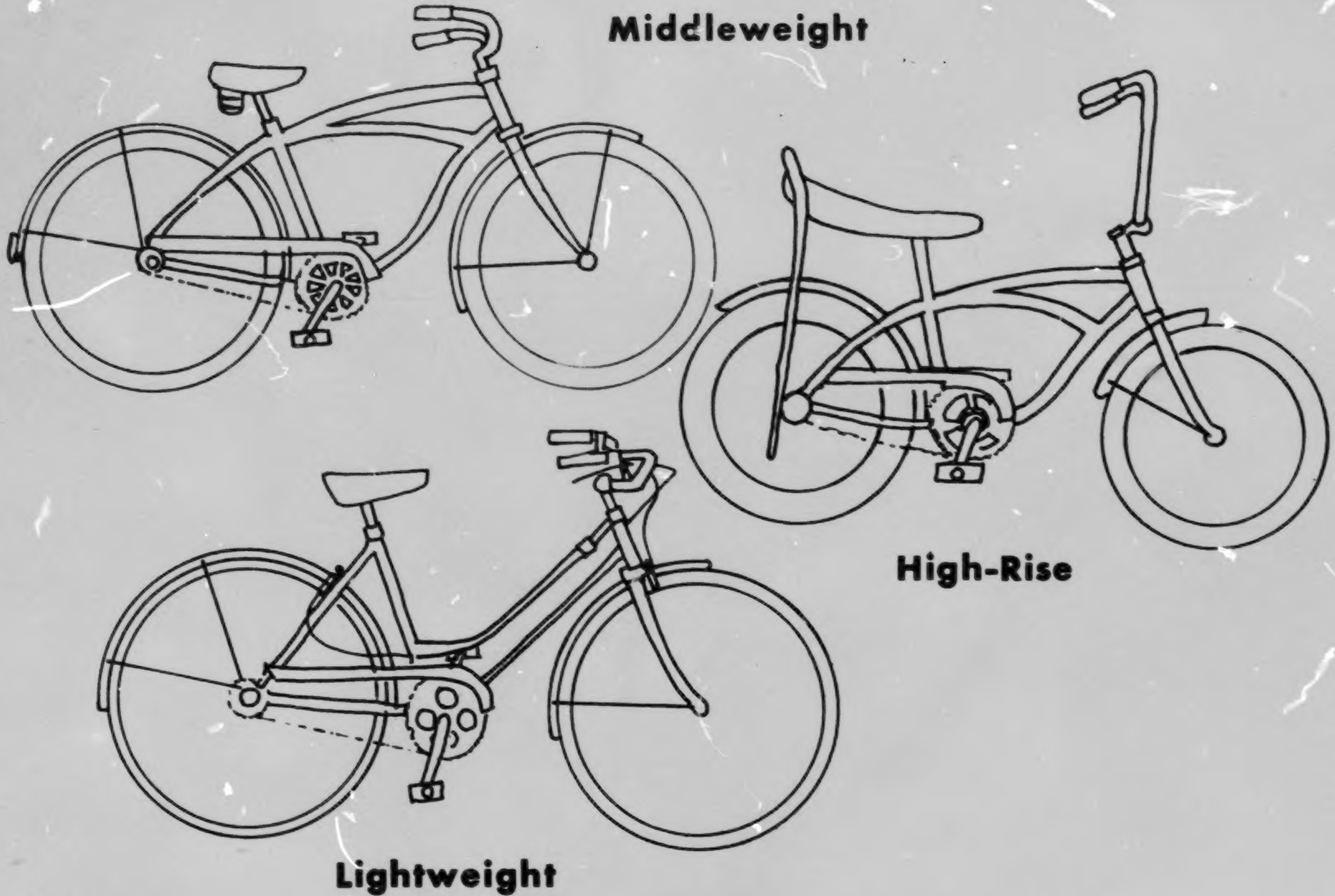
2. Shopping Expedition. Have the students shop at or call bicycle shops for information about prices of bikes and accessories. Have the students pick out a bike and accessories, taking into consideration their size, driving needs, and desires. Have them add up the cost and compare the different prices from various stores.

3. Parent Pamphlet. After the visit or a thorough discussion, have the students make a pamphlet for their parents on choosing a bike that fits.

4. Story Starters. Have students compare the following story starters.
   a. Philip has just learned to drive a bicycle. His bike is a middleweight with foot brakes. One day he borrowed his friend's high-rise with handbrakes and gears. Philip drove fast down the sidewalk and turned quickly into a driveway. . . .
   b. Mike's big brother had a new lightweight bike. Mike wanted to drive it. His brother said it was too big for Mike. One day the bike was parked near the front porch. Mike decided to get on the bike from the second step of the porch. As he drove on the sidewalk to the driveway, he discovered he had to stand up to pedal. He could reach only one pedal at a time. . . .

5. Handlebar Hank. Have students complete the master for reproduction #17, Handlebar Hank (p. 187).

6. Bike Book. Have students make a book illustrating the different bicycles. Students can include drawings of the early bicycles, modern bicycles, and their "dream bikes."


Middleweight
High-Rise
Lightweight

HANDLEBAR HANK

Fill in the blanks with a word that rhymes:

There was a boy.
Who thought a bicycle was only a ____________________.
He raised his handlebars very high.
He lost control and started to ____________________.
He then took the handlebars and made them very low.
"Now for the other boys, I've something to ____________________."
His hands and head were facing the ground.
And another accident he soon ____________________.
In the middle he placed the handlebars.
Now he is safe, he can see all the ____________________.

ANSWER SHEET

HANDLEBAR HANK

Fill in the blanks with a word that rhymes:

There was a boy.
Who thought a bicycle was only a ____*(toy)*____.
He raised his handlebars very high.
He lost control and started to ____*(cry)*____.
He then took the handlebars and made them very low.
"Now for the other boys, I've something to ____*(show)*____."
His hands and head were facing the ground.
And another accident he soon ____*(found)*____.
In the middle he placed the handlebars,
Now he is safe, he can see all the ____*(cars)*____.

CONCEPT IX: PREDICT POSSIBLE HAZARDS

OBJECTIVE

The student will be able to identify probable hazards and to explain ways to avoid them.

CONTENT FOR DISCUSSION

One of the most important defenses a bicyclist can have is the ability to predict possible hazards and to know how to avoid them. This defense is based on following safety rules and constantly scanning the area in front of him for danger. Hazards which are frequently encountered by bicyclists are:

1. An opening car door.
2. Cars backing out of driveways.
3. Children running into the street.
4. Drivers and pedestrians not obeying safety rules, particularly at intersections.
5. Drivers and pedestrians failing to see the bicyclist at night and in bad weather.
6. Drain gratings, sand, gravel, and slippery roads.

These hazards and others can be avoided by--

1. Driving Defensively. The driver should examine what is happening around him to determine if a hazard could result.
2. Obeying Traffic Laws, Signs, and Signals. These are made to protect the individual. When any member of the traffic environment (car driver, bicyclist, pedestrian) disregards them, a serious conflict can result.
3. Driving in a Straight Line. Weaving in and out of traffic is dangerous.
4. Riding Single File in Traffic. Driving double takes up too much of the roadway and places the driver nearest the center of the road or street in a dangerous position. He can easily be hit by a passing car, and he cannot get off the road quickly in a hazardous situation.

5. Keeping Both Hands on the Handlebars except When Signaling. Trick or stunt riding is never safe. Driving with "no hands" can easily result in serious injury. One should never "play" with a bike in the street.

6. Having the Proper Safety Equipment. Equipment includes light, reflector, bell, good brakes.

7. Enhancing Visibility. Wearing clothes that contrast with surrounding colors to enhance visibility. Bright reflective strips are also helpful.

8. Wearing Clothes That Fit. Many accidents occur as a result of loose clothing, especially flared pants legs, being caught in the moving parts of the bicycle. Clip or roll up pants legs to prevent these accidents. The driver should wear shoes that fit snugly to protect his feet and to help him grip the pedals for braking and stopping. Sandals may slip and barefeet are easily scraped.

9. Refusing to Ride Double. A person riding on the handlebars obstructs the driver's view and makes balance difficult. An extra person on the back makes the bike hard to control.

10. Carrying Packages in a Basket. A biker should never carry a package so big that it obstructs his view or interferes with his control of the bike.

11. Refusing to Hitch Rides on another Vehicle. A vehicle could stop suddenly and cause the bicyclist to turn over or collide with other vehicles.

12. Checking a Bike. For safety, check a bike before driving it.

13. Choosing a Safe Route. A biker should mentally drive the route before starting. The driver should use less traveled roads when possible and should leave in time to reach the destination without hurrying.

If the bicyclist predicts hazards and follows safety rules and laws, most accidents can be prevented. It has been found that two of every three bicycle drivers killed or injured in auto crashes had violated a law or safety rules. Some of the most common causes of accidents are:

1. Improper turns.
2. Disregarding traffic signs, signals, and markings.
3. Carrying an extra rider.

4. Running into an opening door of a parked car.
5. Failing to yield right-of-way.
6. Entering a street from a driveway or crossroad without checking for traffic.

Bicycle driving can be safe and enjoyable if the bicyclist remembers to predict, scan for danger, and follow safety rules and laws.

ACTIVITIES

1. Situation Questions.[1] Read or have the students read the following situations and answer the questions orally or in writing.
   a. Suppose you are driving your bicycle on the way to school. A friend joins along beside you. The street is busy and you really feel that it would be safer to drive single file. Would you say anything? If so, describe some ways you could tell him. Which way do you think you would use?
   b. Suppose you are driving your bicycle and meet a friend on foot. Your friend is carrying large packages. He asks you to fit them into your basket. You find that the packages are too large for your basket and that they block your view. What different things could you do? What do you think you would do? Suppose your friend then suggested that you ride him and his packages on the back of your bicycle. What do you think you would do then?
   c. One day Mr. Southwood was driving his car slowly along on the wet pavement. Amy Ellis was driving her bicycle close behind. Suddenly a child ran out in front of the car. Mr. Southwood put on his brakes hard. He just missed hitting the child. Amy braked too, but she could not stop in time. She ran into the back of the car. She was thrown off, and the front wheel of her bicycle was smashed. Luckily, she got only a few small scratches and bruises. Who was at fault? In how many different ways could it have been prevented?

2. Story Starters. Have the students complete the following story starters.

   a. Doug was riding on the handlebars of Steve's bike. Steve had a hard time seeing around his passenger. He drove into an intersection just as two cars going in opposite directions on the other street crossed the intersection ....
   b. As Larry was on his way home from a friend's house, it began to rain. He could not see very far. His brakes got wet and did not work very well....

3. Creative Cartoons. Have the students create cartoons showing clowning or daredeviling on bicycles and the possible dangers involved.

4. Danger Diagrams. Have the students draw diagrams of dangerous situations and explain how to avoid or handle the situations. Hazards which might be included are drain gratings, sand or gravel on the road, backing cars, stopping buses, dogs, and special weather conditions.

5. Local Action. Have the students locate hazardous spots while riding their bikes near their homes. Have each student make a suggestion about how to remove or reduce the hazards.

6. The Safe Route.[6] Using the masters for reproduction #18 and #19, Choosing the Safest Route, (pp.206 and 207) have the students plan the safest route to a friend's house, stores, or school. Students may add hazards to the map or plan routes to other places such as a park. Note: Master for reproduction #18 is for an urban setting; master #19 is for a rural setting.

7. Mock Trial.[2,5] Have the students act out a mock trial (pp.195-204). The parts should be assigned well ahead of the trial so that the lawyers may review their cases and prepare their lines of questioning. This trial brings out the fact that in most accidents there is not just one cause and that each person involved is responsible. Discuss the following questions:

   a. Who is responsible for the accident?
   b. How could this accident have been prevented?

   c. What emotional factors were involved in this accident?
   d. What human limitations were involved in the accident?
   e. What are the sum of the factors which contributed to the accident?

8. Moonbeam's Rules.[4] Have the students read "Moonbeam's Bike Safety Rules" (p. 205) and discuss the rules included in the poem. Have the students plan a bicycle safety awareness day. The students could present a short program to the school, to certain grades, or to their parents. Special badges and pamphlets could be distributed to other classes, and posters could be placed around the school and in the community.

9. Bonehead the Bicyclist.[6] Have students make up a puppet show about Bonehead, the Bicyclist who has an accident. Have a group of students make up the story, have other students work on scenery, props, and puppets. Have the rest of the class witness the accident and fill out the master for reproduction #20, Bicycle Accident Report (p.208).

10. Accident Count.[6] Have students keep a record of falls and other accidents which occur while driving their bicycles. Have them fill out master for reproduction #20, Bicycle Accident Report (p. 208).

11. Accident Facts. Have students discuss the reasons for the following facts and what could be done to prevent such accidents.
   a. Approximately 73 percent of bicycle deaths in North Carolina involved children under the age of 15.
   b. The greatest number of bicycle accidents take place in the summer months and on Saturdays.
   c Bicycle accidents are more likely to occur in residential areas on city streets.
   d. Fatal accidents occur primarily on roads in open country and on noncity streets.
   e. Bicycle accidents are most likely to occur where there is some kind of intersection.

12. Bulletin Board. Have the students draw pictures of bike drivers properly or improperly dressed for operation of a bicycle. As a class project, have these pictures mounted to be used for a bulletin board in the classroom or hallway in the school.

13. Clothes-Related Accidents. Ask the students to tell of any situations they know, that have resulted in injuries to them or their friends from not wearing the proper, well-fitting clothing. Through class discussion, stress the importance of wearing the right clothing or clothes that fit.

MOCK TRIAL

THE FACTS

On Thursday at noon, it was raining. Billy Gray, a student at North Shore Elementary School, was on his way home for lunch. He drove his bicycle out of the school parking lot and over the sidewalk with Mark Driscoll riding as a passenger on his handlebars. Billy turned to the left (without giving a hand signal) and started up Damon Street on the left side. He was going fast and wearing a pair of sunglasses to protect his eyes from the rain. Both his clothes and those of Mark Driscoll were dark in color, so they did not show up well. The bicycle had bad brakes, and was without a reflector or lights for night driving (which might make them less visible in the rain).

Steve Morrison, another North Shore student, had just come from the school carrying a model dinosaur in a big paper box. The dinosaur had been on display for PTA night and had somehow been knocked off the homeroom table and broken off an ear. The homeroom teacher apologized to him for the broken ear, but she could see that Steve was hurt and angry because his model had been broken. Outside in the rain, Steve was hurrying along the sidewalk carrying the box when his mother honked at him from her car parked across the street from the school. She had come to pick him up. Angry and upset as he was, Steve turned off the sidewalk between two parked cars to start across the street to his mother.

The patrol boy on the corner saw Steve turn toward the street and yelled for him to come to the crossing where the signal light was located. But Steve paid no attention to the patrol boy--maybe he didn't hear the yell, or maybe he did. At any rate, Steve started across the street toward his mother--jaywalking. Like Billy and Mark, Steve was wearing dark clothes that were difficult to see in the rain. The box was so large (1 square meter, or 3 square feet) that Steve couldn't see over or around it very well. He didn't see Billy approaching. When Steve stepped out from between the parked cars, he was directly in the path of the bicycle. Steve, Billy, and Mark went sprawling onto the street. No one was seriously hurt. Steve picked up his dropped box and went on across the street to his waiting mother. Billy and Mark righted their upset bicycle and continued their ride up the street.

The foregoing facts, together with a sketch of the accident setting, should be thoroughly familiar to the lawyers and all witnesses in the

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Author's variation of "Mock Trial" from School Safety, January-February, 1966.

trial so there will be no confusion in the account given to the class, which will be serving as a jury. These jury members, should not know ahead of time what happened. The details of the accident should not be known until they are brought out by the lawyers in questioning the witnesses. Such a procedure lends suspense and permits the complete story to unfold a little at a time.)

ROOM SETUP

To open the trial, the principal sits behind the teacher's desk. In chairdesks to the right sit Steve Morrison and Allen Patch. To the left sit Billy Gray and Larry Shap All four boys face the class. Patty Jamison, sitting at the left end of the teacher's desk, also faces the class.

THE TRIAL

Principal: (rising to address the class) Good afternoon, students. I'm the principal of your school. My name is Mr./Mrs. Skogman. I'm here in your room to find out who was responsible for an accident that occurred today at noon when Billy Gray ran into Steve Morrison with his bicycle. (pause)

This is a very serious thing we're talking about, because every year the number of children injured on bicycles continues to go up. In 1954 there were 400 people killed while riding their bicycles, and in 1968 there were 800. In addition, there were 38,000 injured. Thirty-eight thousand!!! So, you see, that's pretty bad. (pause) Here in school we have rules on how our bicycles should be driven, and if we find out that Billy Gray was breaking the rules of bicycle safety, maybe we shouldn't let him ride his bicycle to school any longer. That's what police do with automobile drivers, you know. If someone has an accident and the accident is his fault, sometimes they take away his drivers license. (pause)

So since this is such a serious matter, we're going to handle it just like a case in court. That means with lawyers and a judge and everything. As principal of the school, I'm going to be the judge. Larry Sharp is going to be Billy Gray's lawyer. Allen Patch is going to be the lawyer for Steve Morrison. The clerk that swears in the witnesses will be Patty Jamison.

(Actual names of the student actors may be used instead of these character names, if desired. Girls as well as boys might be lawyers.)

In a regular court of law they use a Bible for the swearing of the witnesses. Here in the classroom, since this is just a mock trial, we'll use a dictionary. For a jury, we'll have everyone in the class who isn't a witness. And when the trial is over, the jury will vote on whether it thinks Billy Gray is guilty or not guilty. (looking at Allen) Is the prosecution ready?

Allen: Ready, Your Honor.

Principal: (looking at Larry) Is the defense ready?

Larry: Ready, Your Honor.

Principal: Then we will have the prosecution lawyer address the jury and tell us what he expects to prove in this case. (Principal sits in the chair behind teacher's desk)

(From this point, it is not possible to give exact words for the actors and actresses. Their speeches, questions, and answers will be determined by the cases the two lawyers have worked out beforehand. After their first questions to a witness, the lawyers will have to phrase what they say according to the answers they get. From here on, the trial becomes an exercise in creative thinking and impromptu acting.)

Allen: (Rising and talking to the class as if it were a jury, Allen tells what he plans to bring out during the trial.) The points the prosecution plans to make will be:

1. Billy was riding too fast.
2. He drove his bicycle over the sidewalk instead of walking it across as he was supposed to.
3. He did not give a hand signal when he turned into Damon Street.
4. He was riding on the wrong side of the street when he struck Steve.
5. He was carrying a boy on his bicycle handlebars at the time of the accident.
6. Even though it was raining, Billy was wearing sun glasses so he couldn't see clearly.
7. Billy's bicycle had faulty brakes.
8. The bicycle had no reflector for night driving.

(At the conclusion, Allen says, "Thank you," and sits down.)

Principal: (to Larry) Is the defense ready for its opening statement?

Larry: Yes, Your Honor. (Larry rises and addresses the class as Allen did.) In this trial the defense will show that Billy Gray was no more responsible for the accident in question than Steve Morrison was. We will show that:

1. Steve Morrison was angry and upset when he left school today at noon.
2. He darted from between two parked cars to get across the street to his mother who was waiting for him.
3. He jaywalked.
4. He disobeyed the patrol boy on duty at the crossing.
5. He was carrying something in a big box that kept him from seeing as well as he should when he crossed the street.
6. He was wearing dark clothes that wouldn't show up on a gray, rainy day.

We will prove all these things with witnesses we intend to call. Thank you, Your Honor. (Larry sits down)

Principal: (to Allen) The prosecution may call its first witness.

Allen: The prosecution calls Mary Alice LeFever to the witness stand, please.

(Mary Alice LeFever leaves her desk and goes to the witness stand. Patty meets her there with the dictionary.)

Patty: State your name, please.

Mary Alice: Mary Alice LeFever.

Patty: (holding out the dictionary.) Place your left hand on the dictionary. (Mary Alice does so, and raises her right hand.) Do you promise to tell the truth, the whole truth, and nothing but the truth, so help you Noah Webster?

Mary Alice: I do.

Patty: You may be seated.

(Mary Alice sits in the witness chair. Patty returns to her chair at the teacher's desk and sits. Allen approaches the witness chair. As he asks Mary Alice questions, he may stand still or he may move to different positions around the chair. The following questions and answers are given merely to guide for the testimony of a witness. Questions will vary according to the case the lawyer has worked out and is attempting to prove.)

Allen: Will you please state your name for the jury?

Mary Alice: Mary Alice LeFever.

Allen: Where do you live, Mary Alice?

Mary Alice: At 1947 Lassiter Street.

Allen: Are you a student at this school?

Mary Alice: Yes.

Allen: What grade are you in?

Mary Alice: Fourth grade.

Allen: Did you see the defendant, Billy Gray, on his bicycle at noon?

Mary Alice: Yes.

Allen: Why did you happen to see him?

Mary Alice: I was going along the sidewalk up to the corner crossing, and all at once Billy came shooting across the sidewalk in front of me on his bicycle.

Allen: Where did this happen?

Mary Alice: There at the parking lot driveway.

Allen: There where you're supposed to walk your bicycle across the sidewalk instead of riding it?

Mary Alice: Yes.

Allen: But Billy Gray was riding his?

Mary Alice: Yes

Allen: Was he going fast, or slow?

Mary Alice: He was going real fast.

Allen: How fast?

Mary Alice: Real fast I had to jump back, or he would have run into me.

Larry: I object!

Principal: On what grounds?

Larry: The witness doesn't know if Billy would have run into her or not. That's just something she thinks might have happened.

Principal: Objection sustained. (to the class) The jury will ignore the witness' last statement.

(The teacher may want to eliminate objections by the lawyers. Objections will add interest only if they are used sparingly and if the lawyers can recognize the grounds upon which objections may be made. Some common reasons for objections are these:

1. The witness is giving an opinion rather than a fact.
2. The witness is testifying to something he did not actually see or hear.
3. The lawyer is telling the witness what to say.
4. The witness (instead of the defendant) is being treated as the person on trial.)

Allen: (to Mary Alice) After Billy Gray got across the sidewalk in front of you, what did he do?

Mary Alice: He made a left turn into the street.

Allen: Did you see him make a hand signal that he was going to turn?

Mary Alice: No

Allen: He didn't make a hand signal to show that he was going to turn?

Mary Alice: I didn't see him make any.

Allen: All right. Billy is out in the street now on his bicycle. Which side of the street was he on?

Mary Alice: He was on the left.

Allen: Are you sure?

Mary Alice: Yes, I am sure.

Allen: Bicycle riders are supposed to go on the right side of the street, you know. The same as cars.

Mary Alice: Yes, I know. But Billy was on the left side.

Allen: Was Billy by himself on the bicycle?

Mary Alice: No, he had another boy riding on his handlebars.

Allen: Do you know the other boy's name?

Mary Alice: Yes, it was Mark Driscoll.

Allen: And Mark Driscoll was the person sitting on the handlebars in front of Billy Gray. Is that right?

Mary Alice: Yes.

Allen: Then what happened?

Mary Alice: About halfway to the corner, they ran into Steve Morrison and knocked him down.

Allen: And did the bicycle fall down, too?

Mary Alice: Yes, everybody fell down.

Allen: Then what happened?

Mary Alice: Steve picked himself up and went across the street where his mother was waiting in the car for him. And both Billy and Mark got back on the bicycle and continued on their way.

Allen: With Mark riding the handlebars again?

Mary Alice: Yes.

Allen: (to Larry) That's all the questions the prosecution has for this witness. You may cross-examine. (Allen returns to his chair)

(Larry comes to the witness stand to question Mary Alice. He will attempt, as defense attorney, to ask her questions that might mix her up--maybe ask the same questions more than once to see if he gets the same answer everytime. If the answers are different, he will point this out to the jury to show that the witness is not reliable.)

Larry: You say, Mary Alice, that Billy Gray nearly ran over you when he came out of the parking lot driveway?

Mary Alice: Yes.

Larry: Did it scare you? Nearly getting run over?

Mary Alice: Sure, it scared me!

Larry: Mary Alice, how far is it from the sidewalk, where Billy nearly hit you, on out to the street?

Mary Alice: Oh, not very far.

Larry: How far?

Allen: I object!

Principal: On what grounds?

Allen: The defense is asking the witness to give her opinion about something instead of telling what she knows to be fact.

Principal: Objection sustained. The witness does not have to answer that question.

Larry: (to Mary Alice) You say you had to jump back to keep from being run over?

Mary Alice: Yes.

Lary: And were you scared?

Mary Alice: Yes.

Larry: Mary Alice, how could you jump back and then have enough time to look at Billy again in the few seconds it took for him to make the turn into the street?

Mary Alice: I was looking at him at the same time I looked back. It all went together.

Larry: Or is it that when you finished jumping back and looked at Billy again, he was already in the street? And you didn't see him turn?

Mary Alice: I saw him make the turn.

Larry: What was the weather like today at noon?

Mary Alice: It was raining.

Larry: That means you were standing there in the rain, frightened from having just about been run over, and yet in the few seconds Billy Gray spent going from the sidewalk to the street, you were able to watch him so well that you could observe that he didn't make any hand signal?

Mary Alice: I didn't say he didn't make any hand signal! I said I didn't see him make a hand signal!

Larry: So he might have made one then? And you didn't see it? Is that possible?

Mary Alice: I suppose it's possible. But I don't think he made a hand signal.

Larry: We're not interested in what you think, Mary Alice! We're interested in what you know for fact! (pause) Now you say the boy riding on Billy Gray's bicycle handlebars was Mark Driscoll?

Mary Alice: Yes.

Larry: And you say that Mark was holding onto the bicycle by holding the handlebars?

Mary Alice: Yes.

Larry: The time it would take Billy Gray to ride over the sidewalk into the street and up the street halfway to the corner where you say his bicycle hit Steve Morrison, couldn't have been more than a minute, could it?

Mary Alice: Something like that.

Larry: And yet in that one minute there in the rain, you jumped back to keep from being run over! You got scared! You recognized Mark Driscoll! You think you noticed that Billy didn't give a left turn signal! And you're sure that Mark Driscoll was holding onto the handlebars! Now did all that really happen? In one minute?

Mary Alice: He must have been holding on to the handlebars.

Larry: Why must he?

Mary Alice: Because that's how you hold onto a bicycle when you're riding piggyback; you have to hold onto the handlebars.

Larry: Have you ever ridden piggyback on a bicycle? (Mary Alice may not be eager to answer.) Have you?

Allen: I object!

Principal: On what grounds?

Allen: Mary Alice is not on trial here. Billy Gray is!

Principal: Objection sustained! The witness doesn't have to answer that question.

Larry: (to the class) I would like to point out to the jury that this witness, Mary Alice LeFever, has changed her story twice in the time I have been questioning her. At first, she was positive that Billy Gray did not give a hand signal when he turned left out of the parking lot. Then she said he might have given a signal, and she didn't see it. She also said at first that Mark Driscoll was holding onto the handlebars. And then she said he must have been, because that's the only way you can stay on a bicycle when you're riding piggyback. So I would say that this is an undependable witness who says things she isn't sure of. The jury should remember that. (to the principal) That concludes the defense's questioning of this witness, Your Honor. (Larry returns to his seat)

Principal: You may step down. (Mary Alice leaves the witness chair and returns to her seat.) Will the prosecution call its next witness.

And so the trail proceeds until the prosection has called all its witnesses. As many witnesses should be called as necessary for Allen to prove the things he wants to prove. Suggested witnesses for both lawyers would be:

1. Billy Gray
2. Steve Morrison
3. Mark Driscoll
4. The patrol boy or girl who was on duty on the corner
5. Steve Morrison's mother (who was waiting across the street in her car and saw the accident)
6. A teacher who could testify to Steve Morrison's state of mind at the time of the accident
7. A student (maybe one who intended to buy Billy Gray's bicycle, but who changed his mind when he found the bicycle had bad brakes and lacked a reflector for night driving)
8. Anyone else who might be helpful in proving a point

Lawyers are expected to tell witnesses ahead of time what they are to say in answer to questions asked on the witness stand. Although actual legal procedures govern the calling of witnesses to testify, for the purpose of this mock trail, it will probably be more stisfactory to permit the witnesses to be called by either side as needed.

Moonbeam's Bike Safety Rules[3]

Ride one on a bike,
And keep to the right;
Ride single file,
Have a light at night.

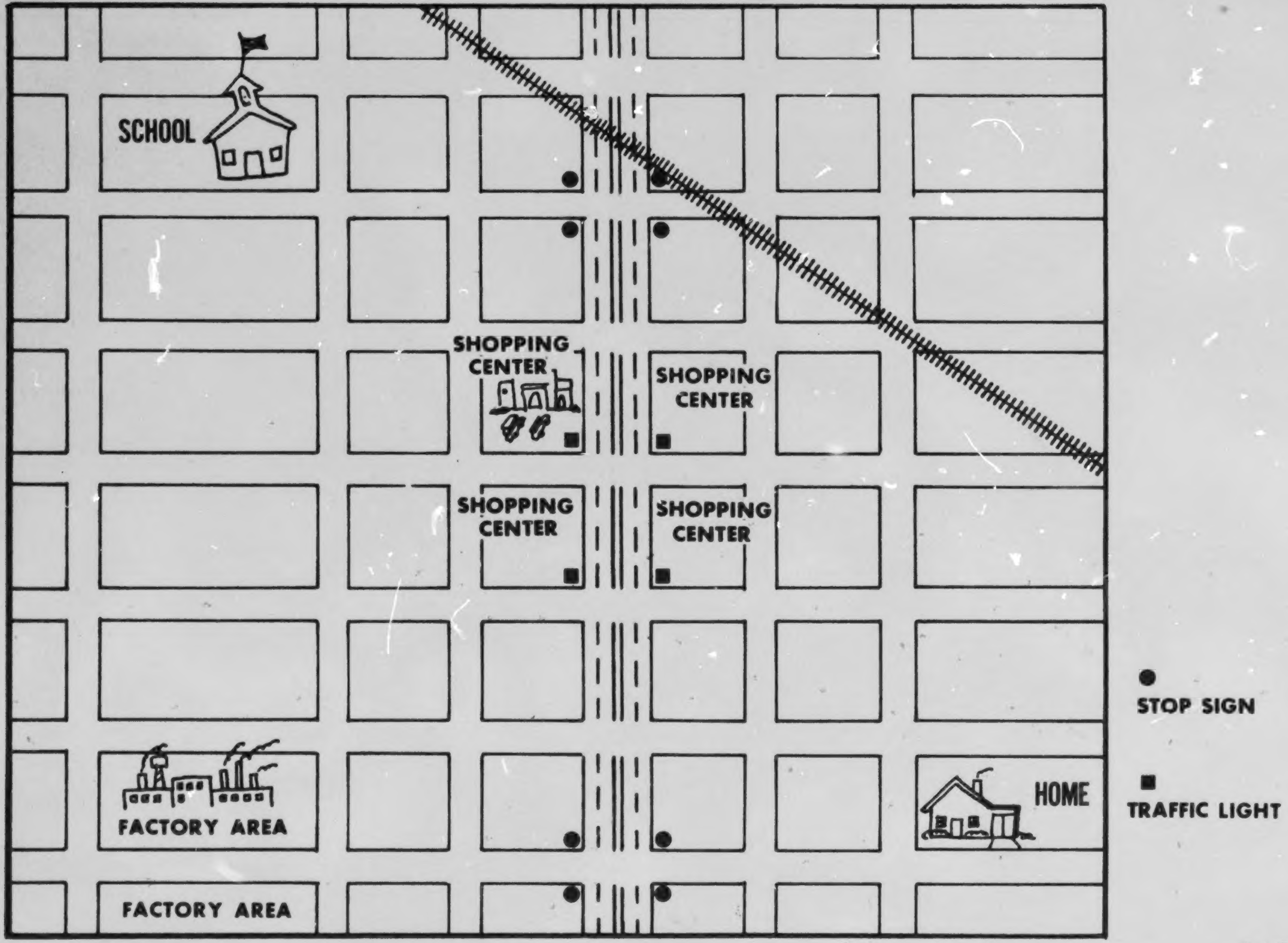
Obey all traffic rules--
Watch out for cars,
Do not hitch rides,
Hold onto handlebars.

Are you a safe driver?
I've given you some clues,
Now you have the green light,
The rest is up to you.

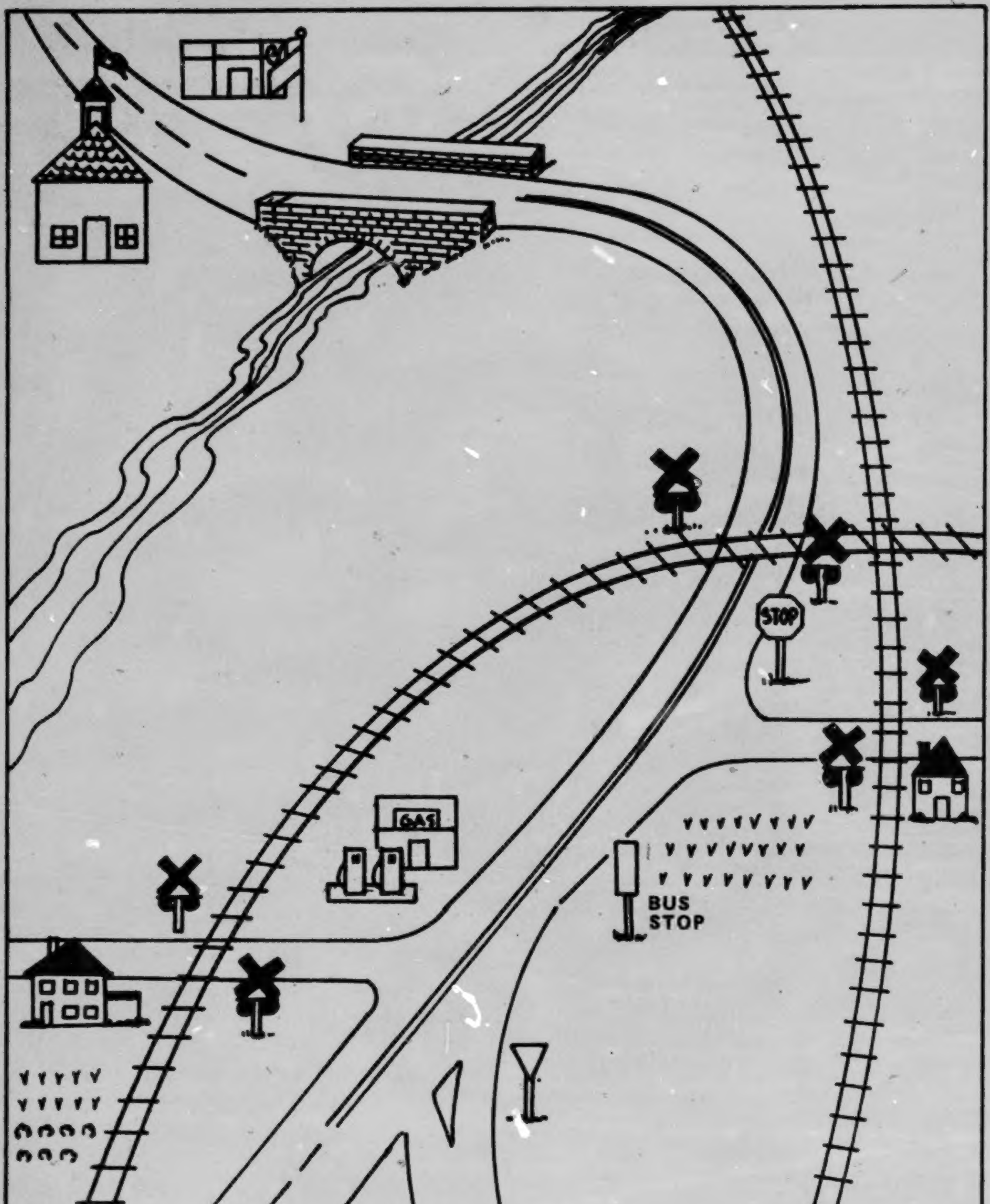
When I ride my bike,
I follow every rule;
I always ride the safest way,
I don't act like a fool.

Riding bikes is a lot of fun,
From morning until night;
But if you're gonna ride your bike,
For safety's sake, drive right!

CHOOSING THE SAFEST ROUTE (URBAN)


SCHOOL
SHOPPING CENTER
SHOPPING CENTER
SHOPPING CENTER
SHOPPING CENTER
FACTORY AREA
FACTORY AREA
HOME
● STOP SIGN
■ TRAFFIC LIGHT

CHOOSING THE SAFEST ROUTE (RURAL)


GAS
STOP
BUS STOP

Bicycle Accident Report

An accident is something that happens without anyone meaning for it to happen. An accident causes someone or something to be hurt. This report will help you find out why your accident happened.

Facts about You

How old are you? ____________

Are you a boy or a girl? ____________

How tall are you? ____________

Facts about the Bicycle

Did you drive your own bicycle? __________

What kind of bike was it--high-rise, middleweight, or lightweight?

____

When did you last safety check your bike? __________

Was the bike safe to drive? _________

Facts about What Happened

When did the accident happen?

Date ___________Day __________Time __________

Was it morning, afternoon, or night? ______________

Did you fall off your bicycle? __________

Did something hit your bicycle? __________

If "yes", what was it? ______________________

Did your bicycle hit something? __________

If "yes", what was it? ______________________

Did the accident happen in a play area or a traffic area? ____________

Did you see any signs or signals? ________

Draw the signs or signals that you saw:

Did you obey the signs or signals?__________

Did you drive on the right (with traffic), on the left (against traffic), or in the middle in a traffic area?____________

Were you using your bike for travel?____________

(Where were you going?____________________)

Were you using your bike for play?______________

(What were you doing?______________________)

Was the ground where you were driving hard or loose?

__________hard (like cement or hard dirt)

__________loose (like gravel or sand)

Was the ground wet or dry?__________

How many people were on the bike?__________

Did you carry something else on your bike?__________

(What was it?________________________________)

(Where did you carry it?______________________)

Were you hurt?_______________

Was anyone else hurt?___________

(Who?____)

Was your bicycle broken?_____________

What do you think caused the accident?__________________________

____

____

BICYCLE SAFETY - LEVEL C

CONCEPT X: DRIVE WITH SKILL AND CONTROL

OBJECTIVE

The student will be able to identify the skills needed to drive a bicycle safely.

CONTENT FOR DISCUSSION

In order to drive a bicycle safely, one should--

1. Know How to Get on the Bicycle. One should know how to mount safely, to start riding, and to keep one's balance.
2. Know How to Pedal Properly. One should claw on downstroke, lift on the upstroke, and thrust on downstroke while pulling up on the handlebars. The ball of the foot should be on the pedal, and one should pedal evenly with both feet. Each leg should do half of the work.
3. Have a Good Form. One should sit firmly on the saddle and lean slightly forward. Keep both hands on the handlebars except when signaling. Tuck elbows in for better steering control. Legs should be parallel with the frame, and knees should be kept in for more power in leg movement.
4. Know How to Brake and Control Speed. When turning, one should stop pedaling when three-fourths of the way through the turn.
5. Know How to Stop and How to Dismount.
6. Know How to Maneuver. One should avoid hazards and avoid stopping suddenly.

ACTIVITIES

1. Getting on - Getting off the Safe Way. Get on the Safe Way. Dis-Master for Reproduction #21, Get on the Safe Way (page 215). The correct procedures are:
    a. Get on your bike from the side that is farthest from the traffic, or other activity area,

b. Push off with the foot on the ground,
c. Press down with the foot on the pedal,
d. Lift himself up and back onto the seat, and
e. Check by looking and listening in all directions to be sure it is safe to go.

2. Getting Off the Safe Way.[6] Distribute Master for Reproduction #22.
   a. Put on brakes,
   b. When bike is almost stopped, pull himself up, off the seat, and lean a little forward,
   c. Keep one foot on the low pedal,
   d. Put the other down and in front of the up pedal ready to touch the ground as the bike comes to a complete stop, and
   e. Get off your bicycle on the side farthest away from traffic or any activity area.

Ask the students: If you are trying to teach a younger brother, sister, or friend to drive a bike, how would you explain getting onto or off of a bike?

Encourage students to demonstrate and practice these safety skills to avoid any possible hazards in bicycle driving.

3. Pedal Pushers.[6] Give students Master for Reproduction #23, Pedaling, Right and Wrong (page 217). Ask the students: "Why is the picture on the right wrong? Why is pedaling with the ball of the foot on the pedal easier? (You get maximum thrust in pedaling and braking; it is easier to claw upward with the ball of the foot.) Point out that a steady rhythm is desirable.

4. Skill Games. Give the students the directions for the following games on braking, controlling speed, turning, stopping, and defensive maneuvering. Tell the students that they can use these if they like to test and improve their skills at home or with their friends. Tell them to remember to pick an area that is smoothly surfaced and free from traffic. Have them invent skill games of their own.

   a. Pebbles in a can. Place four open cans (size of can may vary to increase the difficulty of the game) 5 meters (15 feet) apart in a straight line. Give each participant four small rocks or pebbles. Have each participant drive beside the cans and try to drop the pebbles into them. The driver who gets the most rocks into the can wins.

b. Bike relay. Draw two squares at each end of the playing area for each participant. At one end, put four marbles into each square. Have the drivers begin at the same time; each will pick up a marble, mount, drive to the other end, dismount, and put the marble in the empty square and return to the first square. The person who moves all the marbles first wins.

c. Slow poke. Mark a lane 1 meter (4 feet) wide for each driver. The lanes can be from 5 to 18 meters (15 to 60 feet) long. The object of the race is to be the last one to cross the finish line. The drivers must stay in their lanes, and they cannot put their feet on the ground at any time.

d. Turning game.[11] The driver goes along the first side of the 6-meter (20-foot) lane and turns around clockwise. He then goes in the opposite direction making the next turn in counterclockwise direction. The driver gives a right-turn signal on the first turn and a left-turn signal on the second turn. Ten points is the best possible score. Deduct one point for each time the driver (1) touches a foot to the ground, (2) does not signal for turns, and (3) drives over either border line.

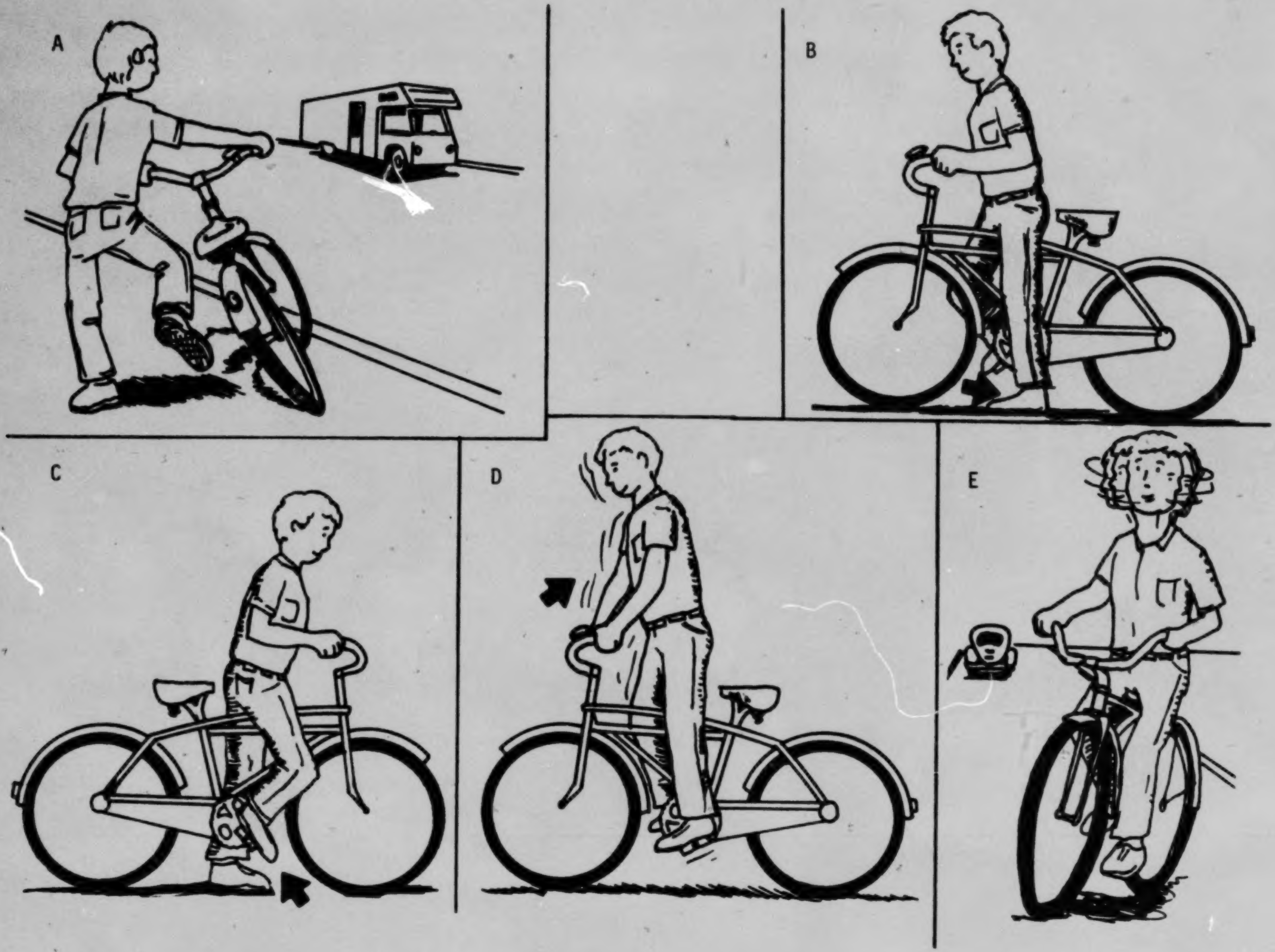
e. Weaving game.[11] The driver drives at a normal speed and weaves through a set of 12 coffee cans set 2 meters (6 feet) apart in a straight line. The winner is the one who completes the course, hits the least number of cans, and makes the most turns.

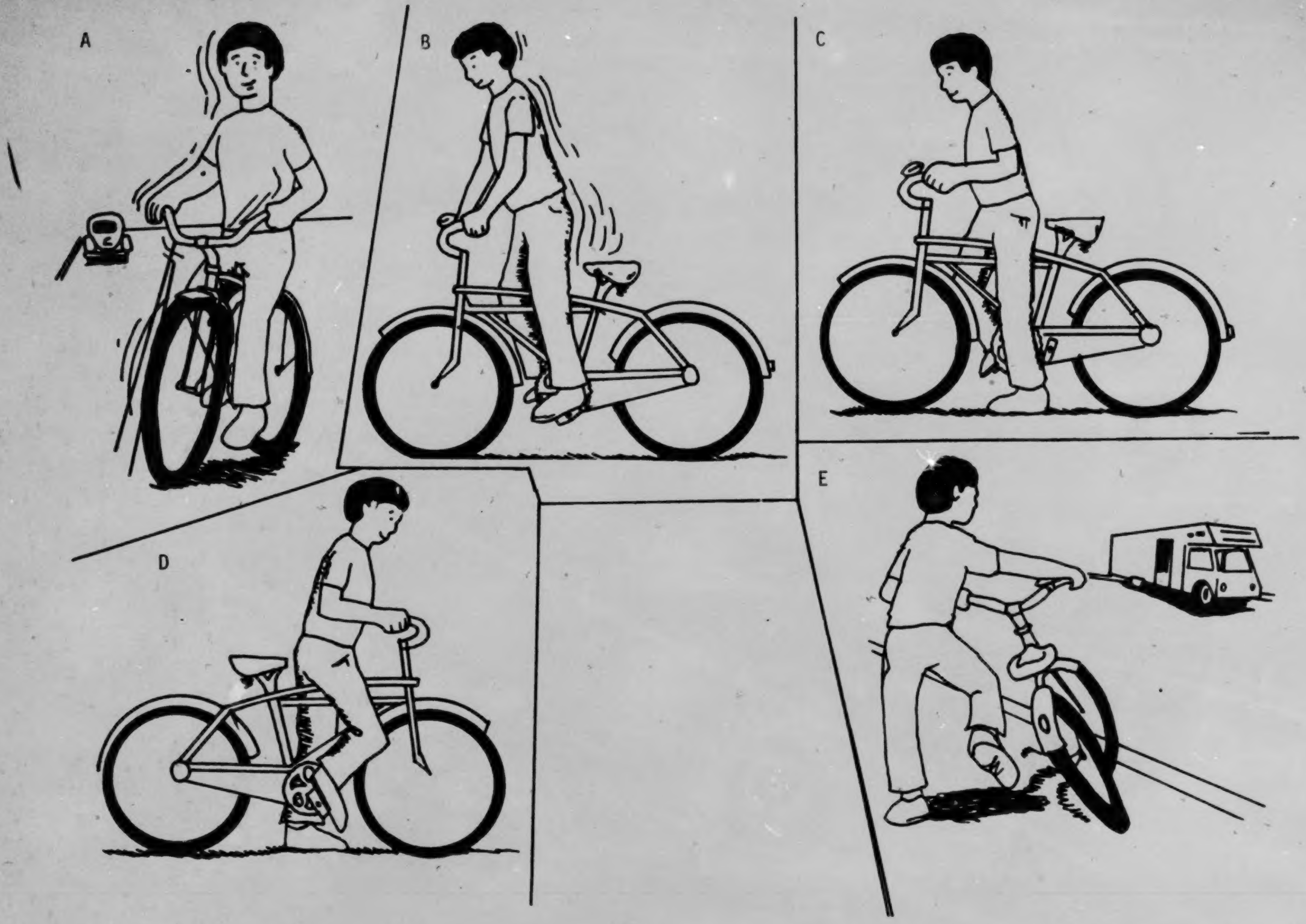
f. Obstacle course.[11] The driver drives for 9 meters (30 feet) on a straight path that is 20 centimeters (8 inches) wide and lined every 2 meters (6 feet) with small rocks at the side of the path. The winner is the one who can stay on the path without touching any rocks.

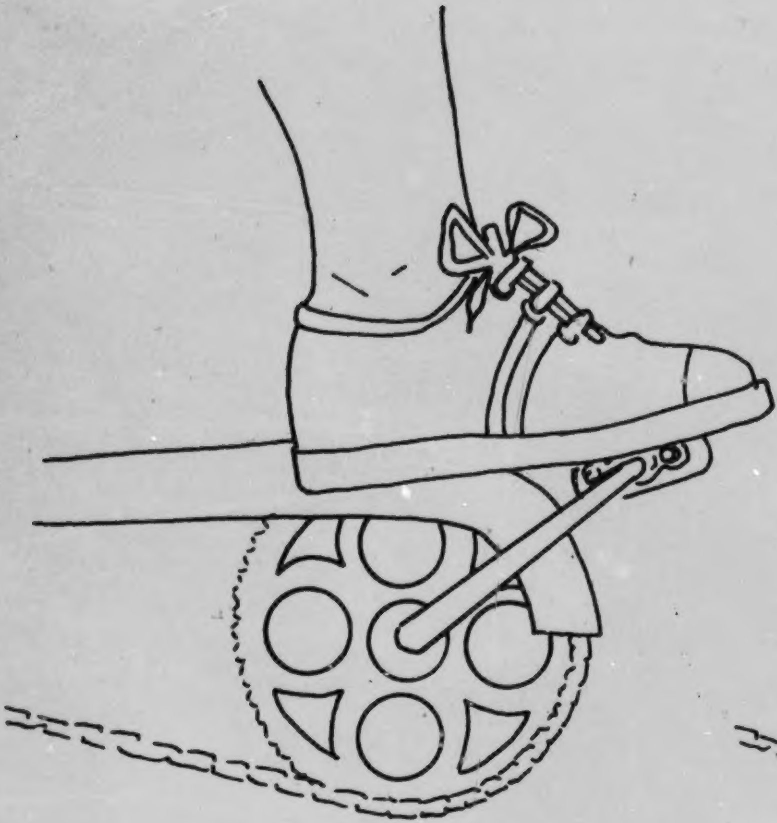
5. Skills Rodeo. Accompanying this section (pages 195 - 232), are directions for setting up two kinds of skills activities: one emphasizing

competition, the other emphasizing improvement of skills. These rodeos may be sponsored by the school, the PTA, Jaycees, parents, or other interested persons. Bike rodeos are excellent means of motivating the community, as well as the students, to be more concerned with bicycle safety. If your school sponsors such an event, review your plans with the local school board. (A bicycle skill progress record sheet for recording scores is on page 233 .)

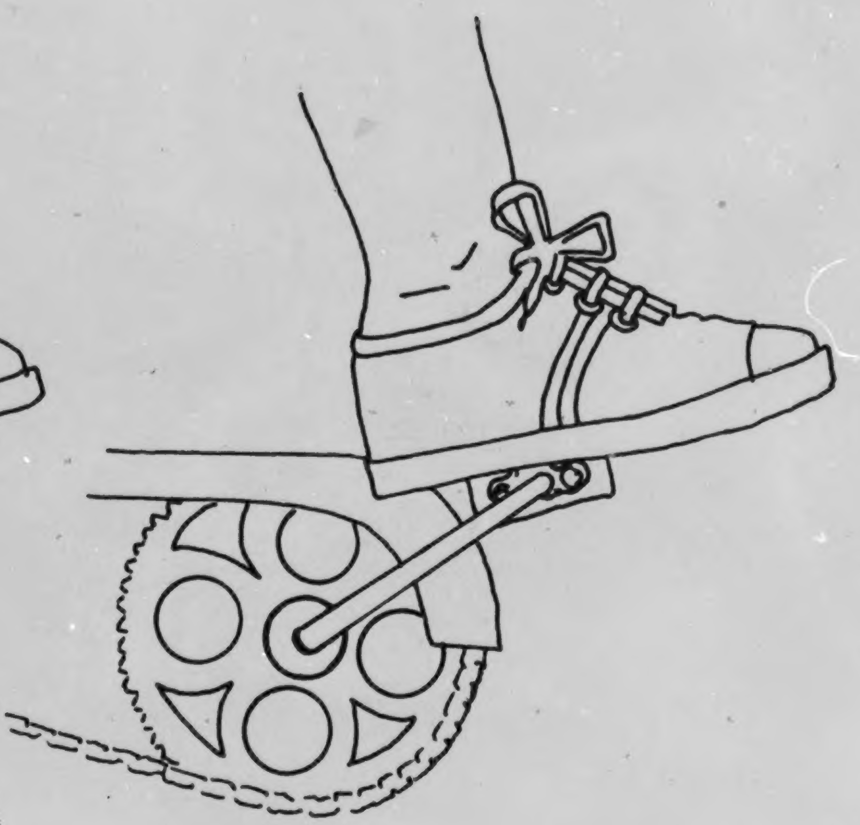
Getting On Your Bike the Safe Way




A
B
C
D
E



Right



Wrong

BICYCLE MEET

Organize this bike meet to stimulate interest in bike skills. Have a panel of judges award points in the six contests and present a trophy to the top scorers in each contest. It may be necessary to have two or more contesting groups based on age to eliminate the possibility of young, inexperienced riders having to compete with older boys and girls.

There are several important factors to be considered in conducting these contests:

1. Scoring on a point basis is recommended.
2. Purpose, procedure, and scoring should be fully explained to all contestants before they start.
3. Participants must use their own bicycles when competing.
4. Each boy and girl should wear the same identification number worn during the skills tests.

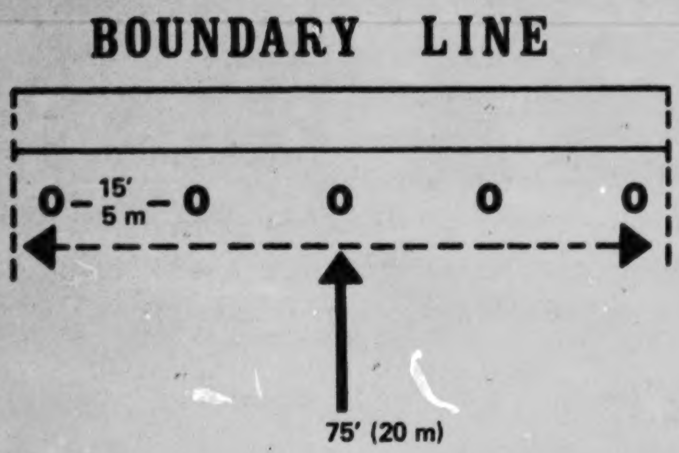
You will need powdered chalk to make the courses for all contests. For Contest 1, you should acquire about 10 coffee cans, or similar receptacles, and a sufficient number of marbles or other small objects. It is recommended that at least two judges be present at every contest to watch for any bike riders who may foul the boundary lines.

CONTEST 1 -- HITTING THE TARGET

Purpose: To test skill and coordination.

Procedure: Place five coffee cans or similar objects in a row about 5 meters (15 feet) apart, along a 20-meter (75-foot) course. It is suggested that the receptacles be half-filled with sand or dirt. Give each contestant five marbles, stones, or other small objects. He then rides outside a chalked line dropping the objects, one at a time, into each can. If the rider stops during his run or fouls the chalked line, he is disqualified. (A judge should remove the objects from the cans before another contestant begins.)

Scoring: Ten points is the best possible score. Credit two points for each object that the rider is able to drop into a can.



CONTEST 2 -- COASTING RACE

Purpose: To test balance and poise while coasting.

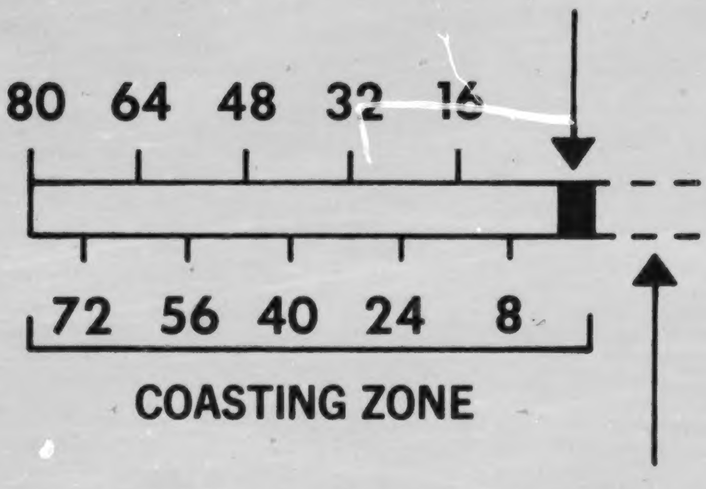
Procedure: The contestant lines up with his front wheel at rest on the starting line. On the command "GO," he pedals as fast as he possibly can for a distance of 3 meters (10 feet). Next, he enters a 1.2-meter (4-foot) deceleration zone in which he is required to start coasting. Then, he enters a 30-centimeter (1-foot) coasting zone and coasts as far as possible, up to 75 meters (250 feet).

Scoring: Ten points is the best possible score. Points are scored on the basis of how far the contestant coasts without getting out of the coasting zone lane. The following point system is suggested.

	Points		Points
8 meters (25 feet) --	1	48 meters (150 feet) --	6
16 meters (50 feet) --	2	56 meters (175 feet) --	7
24 meters (75 feet) --	3	64 meters (200 feet) --	8
32 meters (100 feet) -	4	72 meters (225 feet) --	9
40 meters (125 feet) -	5	80 meters (250 feet) --	10

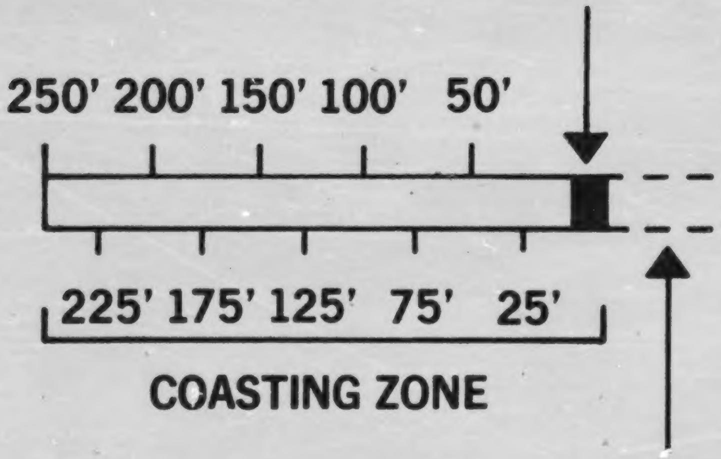
The distances listed above should be marked alongside the coasting zone lane to permit easy scoring. A rider's distance is recorded at the place where his wheels leave the zone or where he comes to a dead stop in the zone.

1.2 m DECELERATION ZONE


80 64 48 32 16
72 56 40 24 8
COASTING ZONE

3 m ACCELERATION ZONE

4' DECELERATION ZONE


250' 200' 150' 100' 50'
225' 175' 125' 75' 25'
COASTING ZONE

10' ACCELERATION ZONE

CONTEST 3 -- SLOW RACE

Purpose: To test balance and poise at the slowest possible speed with bicycle in continuous motion.

Procedure: Set up five level parallel lanes 30 meters (100 feet) long and 1.2 meters (4 feet) wide with about 1.2 meters (4 feet) of space between each lane. Five contestants compete at the same time; one of the five is a preliminary winner chosen from each group of five riders. The preliminary winners should number at least 10; these youngsters should compete against each other in a runoff to determine the final winner.

Scoring: The last rider to cross the finish line is declared the winner in each preliminary race. If the contestant touches his foot to the ground or if either of his wheels crosses the boundary line of the lane he is riding in, he is disqualified. The bike riders winning the preliminary races are the only ones eligible to receive points in the final race.

The final race is scored in the same manner as the preliminary races. The last contestant to cross the finish line is awarded 10 points. The remaining nine places are awarded to the riders finishing in the next nine slowest speeds, (9-8-7-6, etc.) in consecutive order. In other words, the first rider crossing the finish line would receive 1 point; the second, 2 points, etc.

CONTEST 4--BRAKING TEST

Using a portion of the testing area, have each student pedal continuously at a comfortable speed. At some point in this ride, give the command "Stop" as a signal for the driver to make an emergency stop in a straight line. Deduct from score of 100 points:

1. 5 points if the driver stops pedaling before the command.
2. 5 points if the rear tire skids in the stop.
3. 5 points if the driver swerves in making the stop.
4. 10 points if the driver falls off the bicycle in stopping.

CONTEST 5--FIGURE-8 COURSE

Have each student drive around one circle twice and the second circle once, keeping within a lane 60 centimeters (24 inches) wide. Riding in a figure-8 will test the driver's abilities to shift balance when changing directions and to keep control of his bicycle while in a leaning position. He must also show he is not confused or distracted by other cyclists, since several children are in the circle at the same time. Deduct from score of 100 points:

1. 2 points for each time a tire touches either circular line.
2. 3 points for each time a wheel rolls off the path, either toward the outside or inside.
3. 5 points for each time both wheels of the bicycle roll off the path either outside or inside.
4. 10 points for each time the driver falls off the bicycle.

CONTEST 6--STOP SIGN INTERSECTION

Each driver stops for the STOP sign placed at a simulated intersection and demonstrates how to signal, stop, and dismount before proceeding at a stop street. Deduct from score of 100 points:

1. 10 points for failure to come to a full stop and dismount.
2. 5 points if bicycle enters the intersection.
3. 5 points if driver fails to signal.
4. 10 points if driver falls off the bicycle.

BICYCLE DRIVING SKILL TESTS

Since driving skill is an important factor in bicycle safety, these tests have much educational value as well as interest and public relations values. The contests described before are only suggestions. The sponsoring organizations and agencies may plan variations and may change in the scoring method. Remember, these children are far more capable in acquiring these skills than you think.

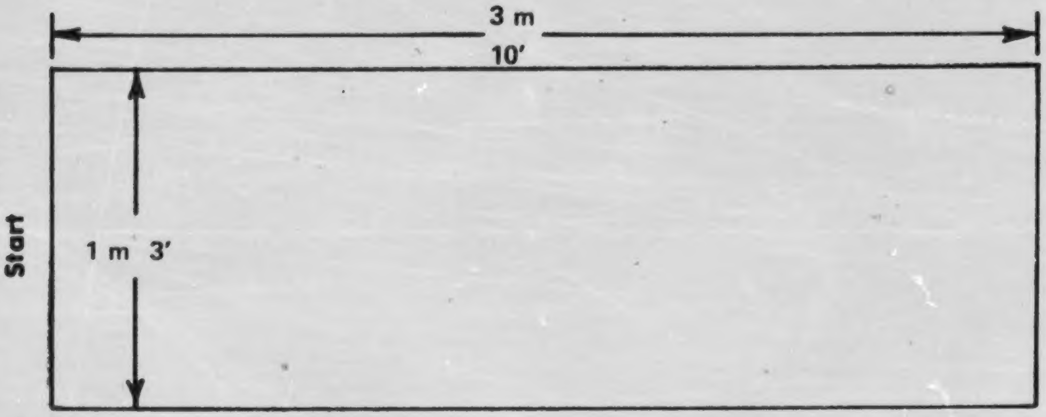
SKILLS RODEO

Set up a Skills Rodeo to spark interest and to make skill improvement rewarding for the young bike drivers. To determine improvement, this rodeo may be given at the beginning and end of the school term or for a succession of years. A progress record, such as that included, can be updated with each rodeo. Eight skill tests are described, along with guidelines for scoring and diagrams of the courses. A safety check of the participating bicycles should be made before the skill tests are begun.

TASK 1: BALANCE ABILITY EXPERIENCE. The driver attempts to travel the length of the course taking as much time as he can and staying within the perimeters. (The object is to spend a long time doing this exercise.) All movements must be in a forward direction (no turning around). Feet must remain on the pedals at all times. The driver may be sitting or standing.

Purpose: To test the balance skill of the rider.

Scoring: Score will be determined by the maximum time that it takes to travel the course.

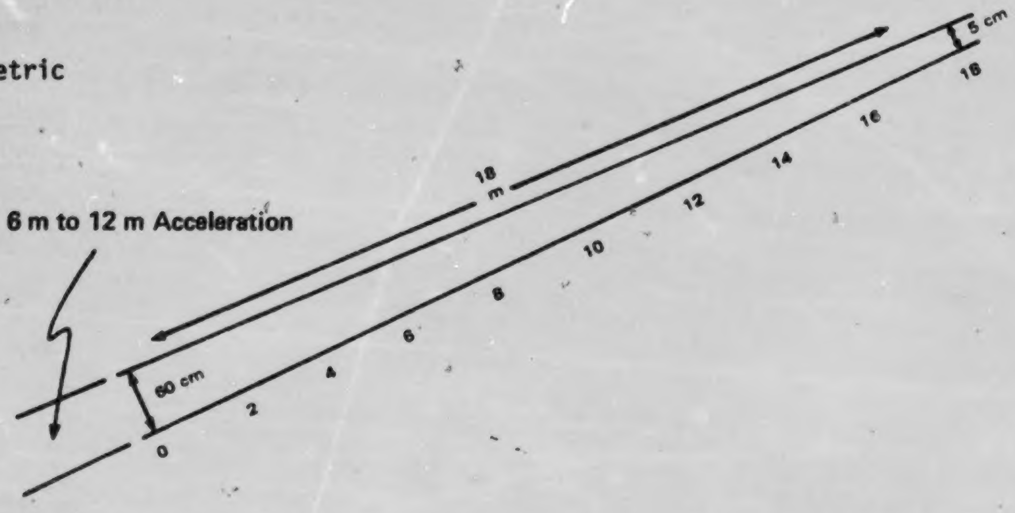


TASK 2: SPEED COORDINATION SKILL. The driver should start 6 to 12 meters (20 to 40 feet) back, enter at the 60-centimeter (2-foot) end of the course at top speed, and travel the length of the narrowing course while trying not to touch either side.

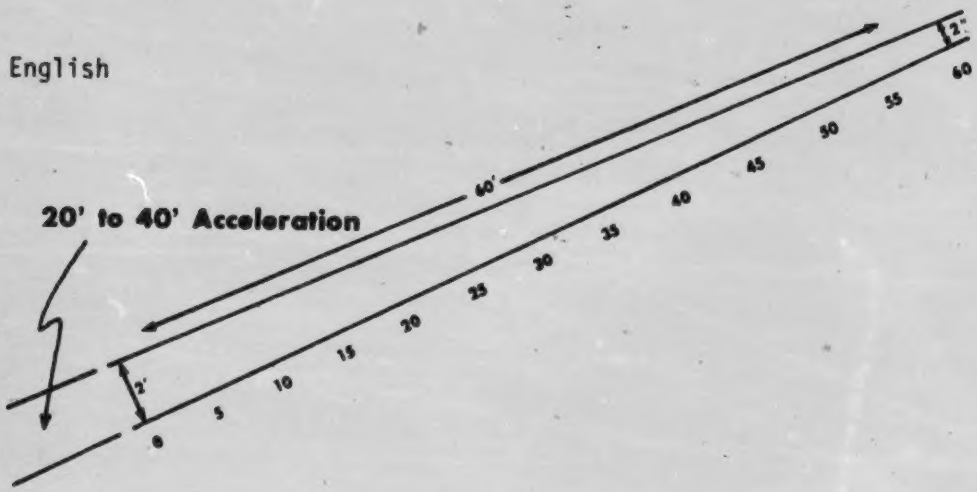
Purpose: To test a driver's ability to judge a straight line while driving at high speed.

Scoring: Scoring is interpreted in meters attained without touching either side.

Metric


6 m to 12 m Acceleration
18 m
5 cm
60 cm
0
2
4
6
8
10
12
14
16
18

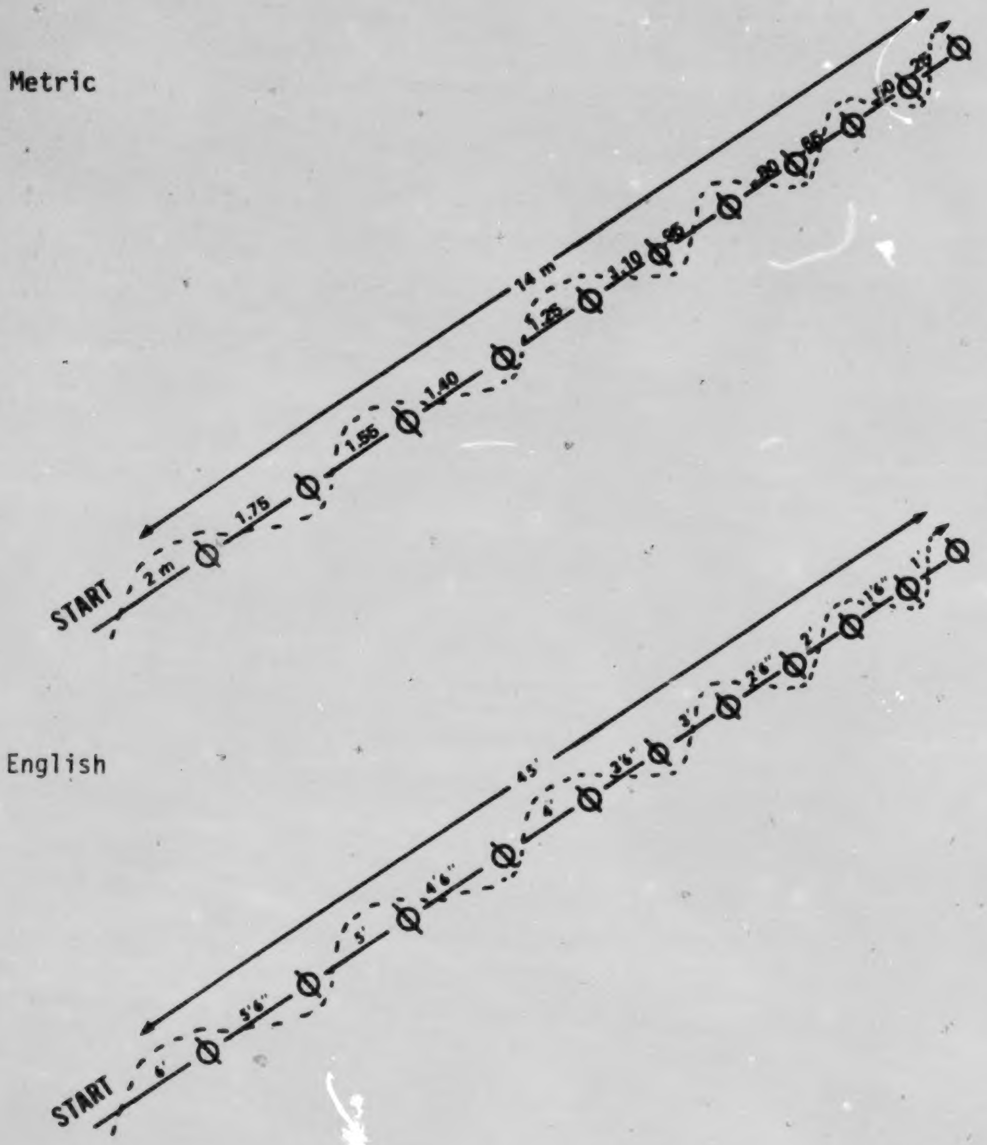
English


20' to 40' Acceleration
60'
2"
2'
0
5
10
15
20
25
30
35
40
45
50
55
60

TASK 3: THE DECREASING SERPENTINE BALANCE AND STEERING EXERCISE. The driver should attempt to follow an alternating path around pylons without moving the pylons.

Purpose: To test the driver's skill in steering maneuvers and balance.

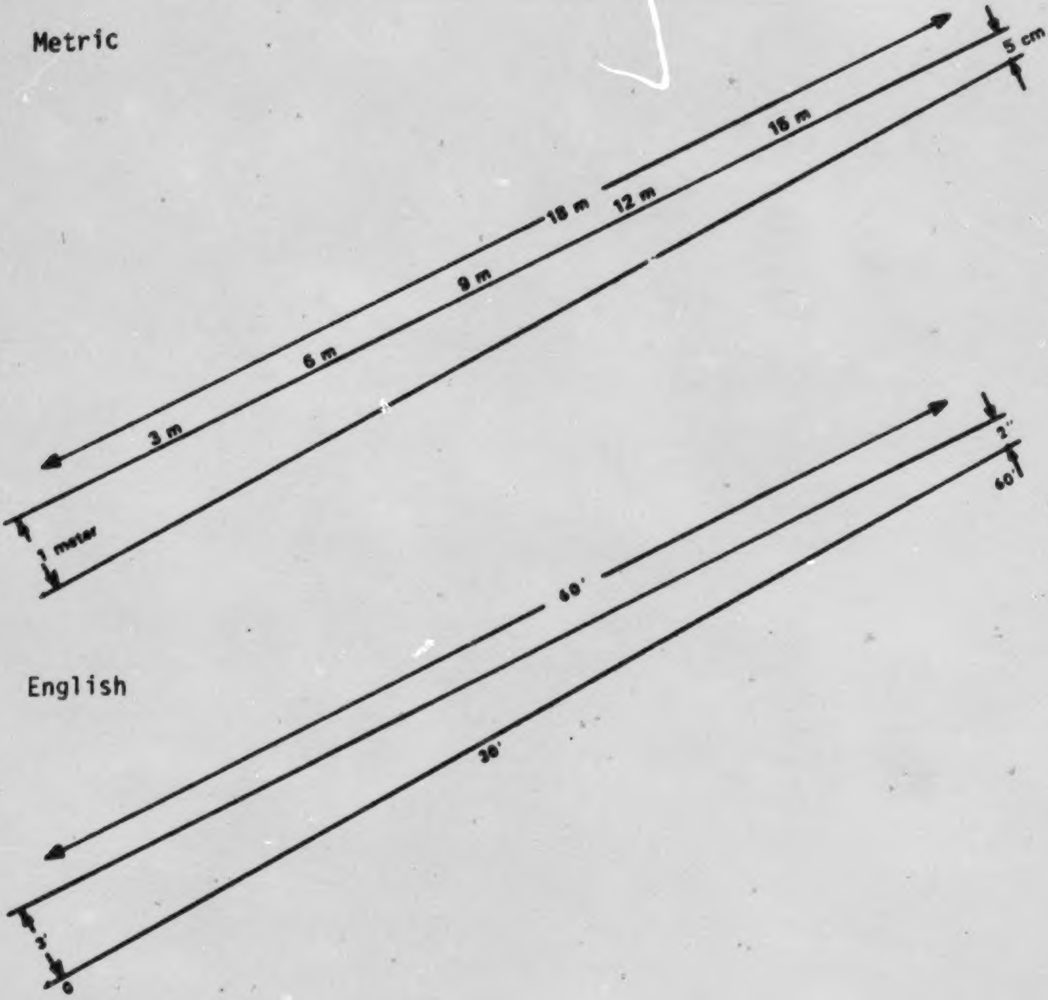
Scoring: The number of pylons (from the starting point) passed without touching represents the score attained.


Metric
START
2 m
1.75
1.55
1.40
1.25
1.10
.95
.80
.65
.50
.35
14 m
English
START
6'
5'6"
5'
4'6"
4'
3'6"
3'
2'6"
2'
1'6"
1'
45'

TASK 4: SLOW-SPEED COORDINATION EXERCISE. The driver should start from a full stop at the 1-meter (3-foot) end and proceed to the narrow end without touching either side. Speed must be a walking pace.

Purpose: To test the ability to drive in a straight line over a great distance.

Scoring: Score is interpreted in meters traveled before touching either side.

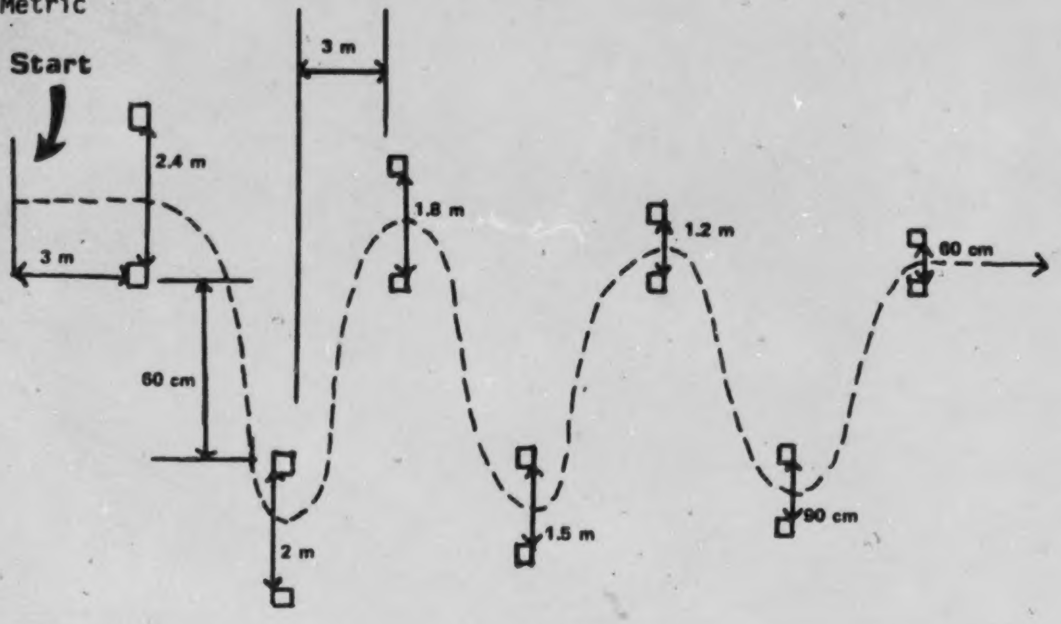

Metric
18 m
15 m
12 m
9 m
6 m
3 m
5 cm
1 meter
English
2"
60'
60'
30'
3'
0

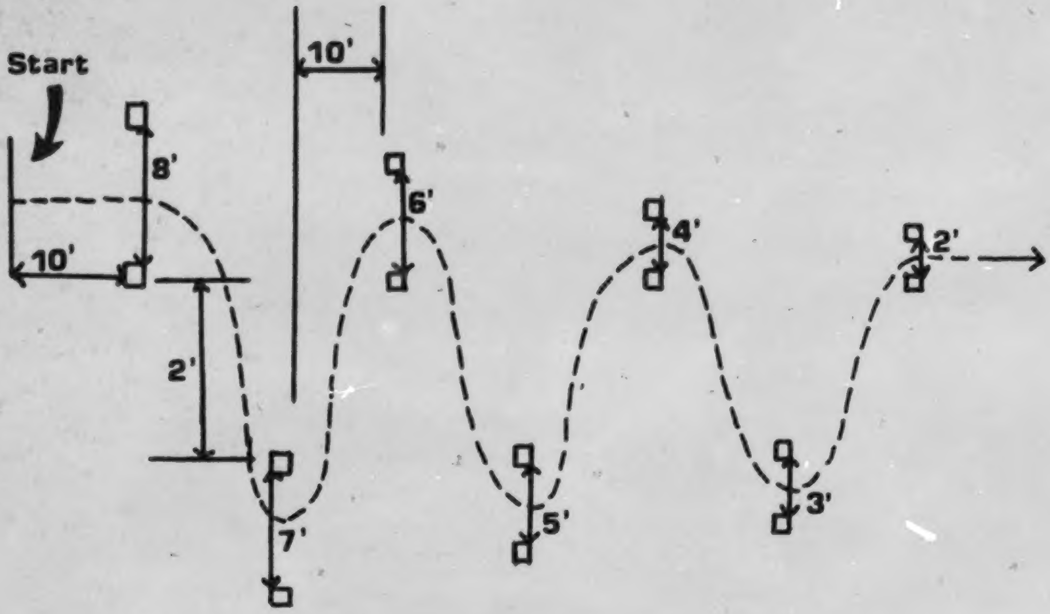
TASK 5: DECREASING-SPACE MANEUVERING EXERCISE. Driving at a slow rate of speed, the driver must put both wheels through each pair of obstacles without his tires touching an obstacle and without his feet touching the ground.

Purpose: To increase the rider's ability to gauge space and distance.

Scoring: Score is determined by the number of obstacles sucessfully passed.

Metric


Start
3 m
2.4 m
3 m
1.8 m
60 cm
1.2 m
60 cm
2 m
1.5 m
90 cm

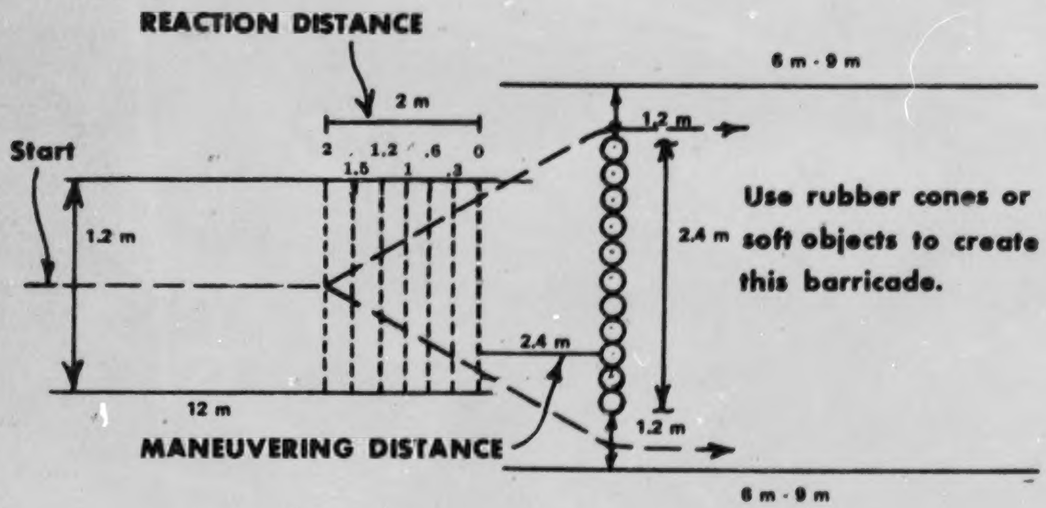


TASK 6: RIGHT OR LEFT EVASION EXERCISE. The driver should drive his bicycle at a very fast pace toward the center barricade line. When the driver reaches a preselected line, a judge gives the command "right" or "left." The driver must maneuver his bicycle in that direction without hitting the barricade or going over any lines. If the child successfully maneuvers his bicycle through the obstacle course, the judge moves to the next shorter reaction-distance line.

Purpose: To test the bicycle driver's skill in interpreting and reacting to a sudden situation.

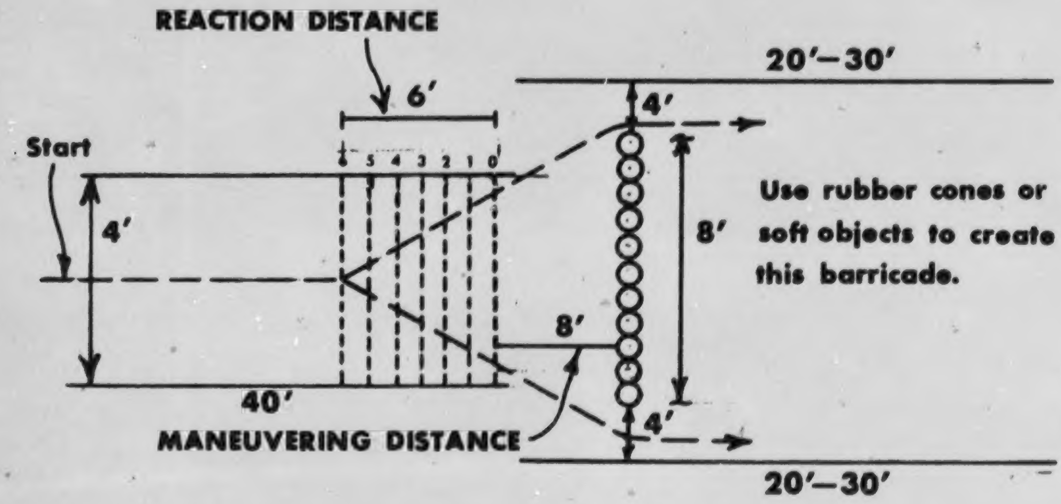
Scoring: Score is interpreted in terms of reaction distance needed to maneuver through the course. Centimeters of reaction distance successfully completed would be the score. (0 would be an excellent score.) Difficulty may be changed by adding or subtracting the reaction distance and the maneuvering space.

Metric


REACTION DISTANCE
6 m - 9 m
2 m
1.2 m
Start
2
1.5
1.2
1
.6
.3
0
1.2 m
2.4 m
2.4 m
12 m
1.2 m
MANEUVERING DISTANCE
6 m - 9 m

Use rubber cones or soft objects to create this barricade.

English

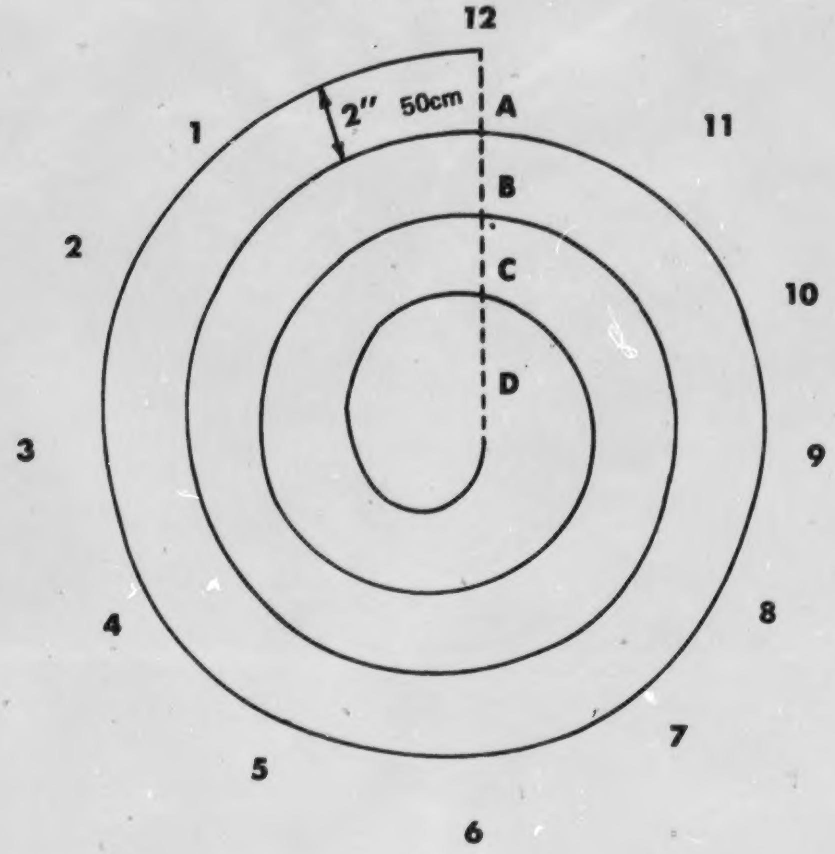

REACTION DISTANCE
20'–30'
6'
4'
Start
6
5
4
3
2
1
0
4'
8'
8'
40'
4'
MANEUVERING DISTANCE
20'–30'

Use rubber cones or soft objects to create this barricade.

TASK 7: LEFT SPIRAL EXERCISE. The driver should follow the spiral to the center without touching any lines. The dotted line shows where one ring ends and the next ring begins as the driver travels around the spiral.

Purpose: To develop a bicycle driver's left-turning skill and balance.

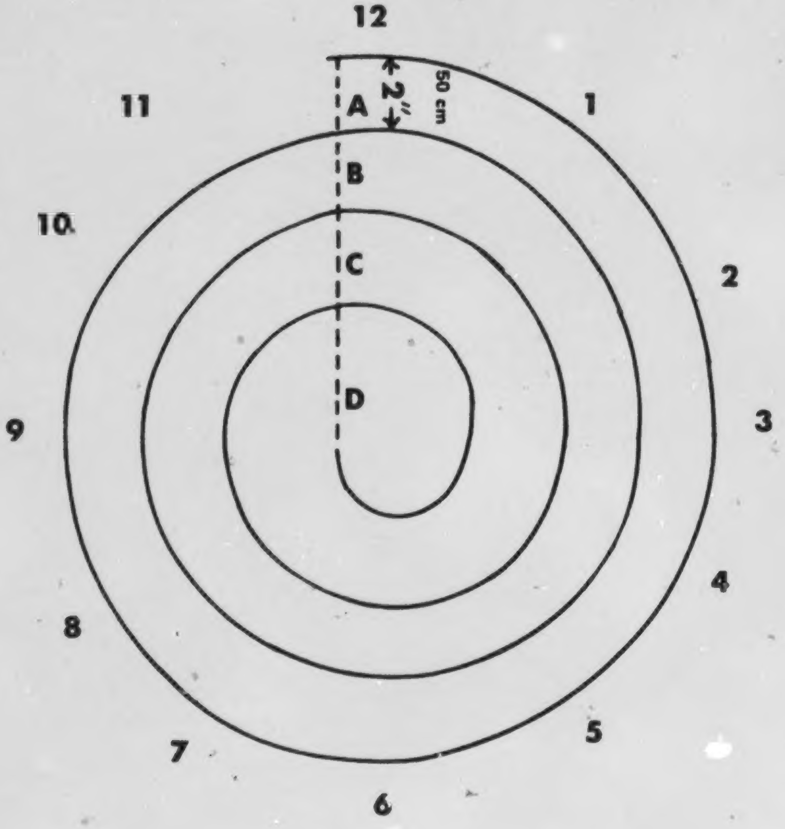
Scoring: Score is determined by a clock position number (counterclockwise) and by a lettered ring. The score is taken from the distance reached at the point where a line is first touched. For example, a score of C-9 would mean that the driver touched his first line in Ring C at a position of 9 o'clock. Each lettered ring represents one completed circle to the next ring, and 12 o'clock represents a transition to the next ring.



TASK 8: RIGHT SPIRAL EXERCISE. The driver should follow the spiral to the center without touching any lines. The dotted line shows where one ring ends and the next ring begins as the driver travels around the spiral.

Purpose: To develop a bicycle driver's right-turning skill and balance.

Scoring: Score is determined by a clock position number and by a lettered ring. The score is taken from the distance reached at the point that a line is first touched. For example, a score of C-9 would mean that the driver touched his first line in Ring C and at 9 o'clock. Each lettered ring represents one completed circle to the next ring, and 12 o'clock represents a transition to the next ring.



BICYCLE SKILL PROGRESS RECORD

Name____

Score each exercise named in the table. Record only those scores that show a definite improvement, and give the day, month, and year of improvement.

EXERCISE	SCORE	DATE	SCORE	DATE	SCORE	DATE	SCORE	DATE
Balance ability	____Minutes ____Seconds		____Minutes ____Seconds		____Minutes ____Seconds		____Minutes ____Seconds	
Speed coordination	____cm ____Feet		____cm ____Feet		____cm ____Feet		____cm ____Feet	
Decreasing serpentine	____Pylons		____Pylons		____Pylons		____Pylons	
Slow speed coordination	____cm ____Feet		____cm ____Feet		____cm ____Feet		____cm ____Feet	
Decreasing space	____Obstacles		____Obstacles		____Obstacles		____Obstacles	
Right or left evasion	____cm ____Feet		____cm ____Feet		____cm ____Feet		____cm ____Feet	
Left spiral	____Ring ____O'clock		____Ring ____O'clock		____Ring ____O'clock		____Ring ____O'clock	
Right spiral	____Ring ____O'clock		____Ring ____O'clock		____Ring ____O'clock		____Ring ____O'clock	

RESOURCE LIST

ORGANIZATIONS

Aetna Casualty and Surety Company, Driver Education Services, 151 Farmington Avenue, Hartford, Connecticut 06115.

Allstate Insurance Company, 7770 Frontage Road, Skokie, Illinois 60076.

American Automobile Association, 1712 G Street NW., Washington, D. C. 20006.

American Automobile Association-North Carolina, Carolina Motor Club, Inc., 701-3 South Tryon St., P.O. Box 60, Charlotte, North Carolina 28202.

Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005.

National Bicycle Dealers Association, 29025 Euclid Avenue, Wickliffe, Ohio 44092.

National Education Association, American Association for Health, Physical Education and Recreation, 1201 16th Street NW., Washington, D. C. 20036.

National 4-H Service Committee, Inc., Program Services, 150 North Wacker Drive, Chicago, Illinois 60606.

National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

North Carolina Department of Motor Vehicles, Traffic Safety Education Division, 1100 New Bern Avenue, Raleigh, North Carolina 27611.

North Carolina Department of Public Instruction, Education Building, Raleigh, North Carolina 27611.

North Carolina Department of Transportation, Bicycle Coordinator, P.O. Box 25201, Raleigh, North Carolina 27611 (for bikeways information).

North Carolina State University, Agricultural Extension Service, Department of Agricultural Information, Box 5037, Raleigh North Carolina 27607.

Schwinn Bicycle Company, 1856 Kastner Avenue, Chicago, Illinois 60635.

University of North Carolina at Chapel Hill, Highway Safety Research Center, Craige Trailer Park, Chapel Hill, North Carolina 27514.

The Wheelmen, 6239 Anauista, Flint, Michigan 48507.

RESOURCE LIST - BICYCLE SAFETY

FILMS

A Monkey Tale. (1968, 16 mm, b&w, sound, 9 min.) A family of monkeys demonstrates both safe and unsafe ways to drive a bicycle. Available for purchase from Encyclopedia Britannica Films, 425 North Michigan Avenue, Chicago, Illinois 60611.

Bicycle Riding Reminders. (1970, 16 mm, color, 11 min.) A police vehicle demonstrates reaction time, braking distances, etc., when autos and bicycles are involved. Film gives basic bicycle safety pointers for younger children. Available from AIMS Instructional Media Services, Inc., P.O. Box 1010, Hollywood, California 90028.

Bicycle Safety. (1968, 16 mm, b&w, sound, 11 min.) Driver responsibilities explored include bicycle maintenance and obeying traffic rules. Available for purchase from McGraw-Hill Company, Text-Film Division, 330 West 42nd Street, New York, N.Y. 10036.

Bicycle Safety Program. (1971, 16 mm, color) Describes bicycling safety for children and adults. Available from Film Loops, Inc., P.O. Box 2233, Princeton, New Jersey 08540.

Bicycle Safety Skills. (16 mm, color or b&w, sound, 11 min.) The theme "good cyclists today, good motorists tomorrow," is emphasized. A youngster shows his small brother safety practices that make cycling safe as well as enjoyable. Available for purchase or rental from Coronet Instructional Films, 65 East Water Street, Chicago, Illinois 60601.

Bicycle Today - Automobile Tomorrow. (1969, 16 mm, color, 10 min.) A boy is shown by a motorcycle police officer how he should check his bicycle for mechanical soundness and demonstrates the importance of knowing the correct bicycle rules and safety regulations before riding in traffic. Available from Sid Davis Productions, 1046 South Robertson Boulevard, Los Angeles, California 90035.

Bicycling Safely Today. (1972, 16 mm, 20 min.) Pleasantly illustrates how cyclists can achieve full enjoyment from their wheels. It is the perfect film for solving safety problems in the community. Available on loan from Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington D.C. 20005

Can You Stop on a Dime? (1972, 16 mm, color) Demonstration for elementary school children of the safety rules for bicycle riding; why instantaneous stops are impossible for bicycles and automobiles; automobile blindspots and resultant danger to pedestrians. Available from Sid Davis Productions, 1046 South Robertson Boulevard, Los Angeles, California 90035

I'm No Fool with a Bicycle. (1971, 16 mm, color) The bicycle, as Jiminy Cricket points out, is a wonderful invention--even more wonderful if we know the right way to do things with it. After tracing the history of the bicycle from its first invention in France around 1810 up to the modern safety bike as we know it today, Jiminy graphically illustrates the wrong and the right things to do with a bike. He's strongly recommending the latter--that is, "If you want to live to be 92." Available for purchase or rental from Walt Disney Educational Materials Company, 495 Route 17, Paramus, New Jersey 07652.

Just Like a Car. (1971, color) A good defense in traffic and obeying the Rules of the Road are emphasized. Available from Film Loops, Inc., P.O. Box 2233, Princeton, New Jersey 03540.

Once Upon a Bicycle. (16 mm, b&w, sound, 10 min.) In this film the young cyclist is likened to the driver of other vehicles. Under the guidance of a motorcycle officer, youngsters are shown how to drive their bicycles safely. Available from National Child Safety Council, 125 West Pearl Street, Jackson, Michigan 49201 Free loan to members of the National Child Safety Council.

One Got Fat. (1966, 16 mm, color, 17 min.) Ten bicycle-riding monkeys are going to the park for a picnic. Each has a personal characteristic that impels him to break a law regarding bicycle safety. As a result, only one arrives at the park. Lighthearted and narrated by Edward Everett Horton, the film makes clear, sobor points on the bicyclist's responsibilities to himself and to others. Perennial Education, Inc., 1825 Willow Road, Northfield, Illinois 60093.

Ride On. (1972, 16 mm, color, 15 min.) Mr. Banana explores the history of the bicycle in order to discover a better bike. Through a series of "slap-stick" bicycle mishaps he learns to follow the bicycle rules of the road. Available from McGraw-Hill Text-Films, 1221 Avenue of the Americas, New York, N.Y. 10020

Seven Rules of Bicycle Safety. (16 mm, sound, color, 13 min.) A boy named Chuck discovers that courteous behavior on a bike is not only safer but more fun. He learns his lesson with the help of two safety puppets and a policeman. Available on free loan from Association Films, Broad and Elm Streets, Ridgefield, New Jersey 07657.

The Bicyclists. (1968, 16 mm, sound, color, 15 min.) A Danish film with English narration. The story of a lively red bicycle and its two owners: one who obeys all the rules and one who does not. Available for rental from Western Cinema Guild, 244 Kearny Street, San Francisco, California 94108.

The Day the Bicycles Disappeared. (1967, 16 mm, color, 14 min.) Safe and courteous bicycle driving habits are presented in fantasy form. Purchase from American Automobile Association Foundation for Traffic Safety, 1712 G Street NW., Washington, D.C. 20006.

You and Your Bicycle. (1961, 16 mm, b&w, 10-1/2 min.) Hazards met on a trip to the store for mom; safety maintenance and correct driving habits are featured. Purchase or rent from Progressive Pictures, 1810 Francisca Court, Benifica, California 94510.

Your Bicycle and You. (1969, 16 mm, sound, color, 13 min.) Compares bicycles and automobiles, discusses bicycle operation and care as well as rules of the road. Available for purchase from Modern Learning Aids, Division of Modern Talking Pictures, 3 East 54th Street, New York, N.Y. 10022.

FILMSTRIPS

Bicycle Safety. (1968, 35 mm strip, silent, color, 39 frames) Illustrates where to learn to ride; what rules to follow when riding during the day, at night, and in the rain; how to prevent tire damage; and how to carry packages on a bike. Available from Curriculum Materials Corp., 1319 Vine Street, Philadelphia, Pennsylvania 19107.

I'm No Fool with a Bicycle. (1971, color) Riding a bicycle in 1810 in France was probably just as much fun as it is today in America . . . but even our modern safety bike can be dangerous. Jiminy Cricket traces the history of this popular invention and demonstrates the rules for safe riding. He urges children to keep their bikes in good working order and to follow automobile safe driving regulations. Available from Walt Disney Educational Materials Company, 495 Route 17, Paramus, New Jersey 07652. 33-1/3 rpm record and filmstrip available from Maryland State Department of Education, Safety, and Transportation, P.O. Box 8717, Friendship International Airport, Baltimore, Maryland 21240.

Your Adventures in Traffic Safety: Unit 2. (1971, 35 mm strip, color) Describes bicycle safety rules to follow as a part of a 4-unit package which includes traffic and pedestrian safety and passenger safety from all aspects. Available from Professional Arts, Inc., 1725 Parrott Drive, San Mateo, California 94402.

BOOKS FOR TEACHERS

Bicycle Blue Book. Good Year Tire and Rubber Company, Cycle Tire Department, 1144 East Market Street, Akron, Ohio 44316

Bicycle Riding Clubs. Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005.

Bicycle Safety Quiz. Aetna Casualty and Surety Company, Public Education Department, Hartfor, Connecticut 00615.

Bicycling is Great Fun. American Automobile Association, 1712 G Street NW., Washington, D.C. 20006.

Bike Fun. Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005

Helpful Hints on Bicycle Care. Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20006.

Vision, How, Why and What We See. New York: Golden Press, 1962.

The Teacher's Guide to Better Bicycle Driving. Contains lesson plans, quizzes, traffic signals. Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005

BOOKS FOR STUDENTS

Hale, E. M. *Roller Skates, Scooter and Bike*. 1201 South Hastings Way. Eau Claire, Wisconsin, 1966.

Kessler, Leonard. *A Tale of Two Bicycles*. New York: Lathrop, Lee and Shepard Company, 1971.

Kessler, Leonard. *Mr. Pine's Mixed-Up Signs*. New York: Grossett and Dunlap, 1961.

McFarlane, John W. *It's Easy to Fix Your Bike*. Follet. Revised edition, 1964.

Pid, Mr. *The Day the Bicycles Disappeared*. Washington, D.C.: Robert B. Liece, Inc., 1969.

Pineo, Craig. *Peter Policeman*. New York: Golden Press, 1968.

Zolotov, Charlotte. *Mr. Rabbit and the Lovely Present*. New York: Harper, 1962.

BOOKLETS, LEAFLETS, AND MAGAZINES

Berzina, E., and M. Kramer. *An Investigation of Rider, Bicycle and Environmental Variables in Urban Bicycle Collisions*. Ontario, Canada: 1970.

Campbell, B. J., J. P. Foley, and E. A. Pascarella. Bicycle Riding and Accidents Among Youths - A Summary Report. Chapel Hill, North Carolina: Highway Safety Research Center.

Bicycle Safety in Action. National Commission on Safety Education, National Education Association, 1206 16th Street NW., Washington, D.C. 20036, 1964.

Bicycle Safety Tests and Proficiency Course. Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005

Bike Ordinances in the Community. Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington D.C. 20005

Bike Safety Programs. Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005

Bike Trails and Facilities. Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005

Catalog-Poster Directory. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

Cycling in the School Fitness Program. American Association for Health, Physical Education, and Recreation, National Education Association, 1201 16th Street NW., Washington, D.C. 20036, 1963.

A Guide to Audio Visual Materials on Bicycles and Bicycle Safety. Bicycle Manufacturer's Association of America, 1101 15th Street, NW., Suite 304, Washington, D.C. 20005.

Guide to Traffic Safety - Articles, Pamphlets and Books. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

What Everyone Should Know About Bicycles. Channing L. Bete, Inc., Greenfield, Massachusetts, 1968.

POSTERS AND PICTURES

Accident Prevention Posters. Eight in packet, one set per teacher. Lilly and Company, Eli, Public Relations Divisions, 740 South Alabama Street, Indianapolis, Indiana 46206.

Be A Better Biker. Contains cycling safety rules. Employers Insurance of Wausau, 2000 Westwood Drive, Wausau, Wisconsin 54401 (11x17 in. size, charge #863).

(a) Walk Your Bike Across Busy Intersections; (b) Keep Your Bike Repaired; (c) Obey Traffic Signs. American Automobile Association, Carolina Motor Club, 701-3 South Tryon Street, P.O. Box 60, Charlotte, North Carolina 28202.

INSTRUCTIONAL AND CURRICULUM MATERIALS

All About Bikes - A Bicycle Safety Program. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

Bicycle Safety Program. Auxiliary to the American Optometric Association, 144 West Broadway, Shelbyville, Indiana 46176.

Bicycle Safety Program. Canadien De La Securite, Director of Programs Council, 30 Driveway, Ottawa 4E, Canada.

Hogg, B. J. Skill Bees. Child Tested Skill Builders, Box 295, Route 1, Vicksburg, Missouri 49097, 1971. The set includes filmstrips, slides and activities concerned with: Basic Writing Strokes - Kit No. SKB-101; Figure Ground Discrimination; Multi-Match Cards - Kit No. SKB-600; Shapes - Kit No. SKB-200; Visual Motor Sequencing - SKB-100

Stuart, Francis R. Physical Fitness in Action. Dansville, New York: F. A. Publishing Company, 1962.

Stuart, Francis R. Physical Fitness in Motion. 10 posters, 1 record chart and 40 classroom activities to develop sound bodies. Dansville, New York: F. A. Owen Publishing Company, 1962.

Walt Disney Study Prints. Bicycle Safety Set No. 102. A series of nine study prints based on the Walt Disney 16 mm film titled, "I'm No Fool with a Bicycle." Each print contains teaching aids and suggested activities printed on the back. Walt Disney Study Prints, Walt Disney Films, 545 Cedar Lane, Teaneck, New Jersey 60068.

SAFETY SONGS

Manners Can Be Fun, Songs of Safety and Health Can Be Fun. ($2.49, speed 33) Educo Services, 14 Warren Street, New York, N.Y. 10007.

Popeye. . .Health, Safety Songs. ($1.98) A. A. Records, Inc., 250 West 57th Street, New York, N.Y. 10019.

Songs of Safety. ($2.10, speed 78) Educo Services, 14 Warren Street, New York, N.Y. 10007.

TRANSPARENCIES

Cyclists Ride Single File on Right Side. (color, 10x10 prepared transparency, suggested for high school) D. C. A. Educational Products, Inc., Subsidiary of Display Corporation of America, 4865 Stenton Avenue, Philadelphia, Pennsylvania 19144.

SCHOOL BUS SAFETY

Level C

SCHOOL BUS SAFETY UNIT - LEVEL C

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SCHOOL BUS SAFETY - LEVEL C

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SCHOOL BUS SAFETY - LEVEL C

INTRODUCTION

In the 1972-73 school year, 724,000 children rode to school in buses. These buses traveled 120 million kilometers (75 million miles) during the year. While school bus accidents are relatively rare, there are safety practices that children who ride these buses should know and follow. Children should respect the authority of the school bus driver. Children should also know that their disregard of a safety practice could be the cause of a fatal accident. A thorough understanding of all bus safety practices is needed to improve the teamwork and cooperation between the riders and the driver.

The School Bus Safety Unit is divided into five content areas--Going to the Bus and Waiting for the Bus, Entering the School Bus, Passenger Behavior, Leaving the School Bus Safely, and Emergency Procedures. In the children's experience, these activities represent a fluid process which flows together. Thus, you may find it difficult to teach each concept separately. The concepts are split merely to allow you to structure the children's learning experiences more easily and to choose the practices you wish to emphasize according to the children's needs. If the separation of these concepts seems artificial to you, feel free to structure the lessons as you choose.

UNIT OBJECTIVES

1. To develop safe and responsible behavior in the children while on board and en route to or from a school bus.
2. To develop the children's understanding of their responsibility to the school bus driver and/or school bus patrol, and for their own safety while on the way to school riding the bus.

SCHOOL BUS SAFETY UNIT CHECKLIST FOR TEACHERS

This School Bus Safety Unit Checklist is provided as a guide to assist you in determining your students' knowledge of bus safety practices.

1. Do your students know the time that they should arrive at the bus stop?
2. Do your students walk on the left when there is no sidewalk?
3. Do your students wait off the roadway at the bus stop?
4. Do your students look after younger children while waiting?
5. Do your students know the dangers of "rough housing" at the bus stop?
6. Do your students line up when the bus arrives?
7. Do your students cross the road safely to board the bus?
8. Do your students use the handrail?
9. Do your students know that the driver's ability to drive safely depends on each passenger's cooperation?
10. Do your students take a seat immediately after boarding and remain seated throughout the trip?
11. Do your students put their books down and hang on if they must stand on the school bus?
12. Do your students keep their feet, books, and other belongings out of the aisle?
13. Do your students keep their bus clean?
14. Do your students keep their heads and arms inside the bus?
15. Do your students avoid distracting the bus driver?
16. Do your students show respect for the bus driver?
17. Do your students avoid playing with the emergency door, fire extinguisher, and first aid supplies?
18. Do your students know the responsibilities of a school bus patrol?

CHECK YOURSELF FOR SAFETY

1. Do you know the time that you should arrive at the bus stop?
2. Do you walk on the left when there is no sidewalk?
3. Do you wait off the roadway at the bus stop?
4. Do you look after younger children while waiting?
5. Do you know the dangers of "rough housing" at the bus stop?
6. Do you line up when the bus arrives?
7. Do you cross the road safely to board the bus?
8. Do you use the handrail?
9. Do you know that the driver's ability to drive safely depends on each passenger's cooperation?
10. Do you take a seat immediately after boarding and remain seated throughout the trip?
11. Do you put your books down and hang on if you must stand on the school bus?
12. Do you keep your feet, books, and other belongings out of the aisle?
13. Do you keep your bus clean?
14. Do you keep your head and arms inside the bus?
15. Do you avoid distracting the bus driver?
16. Do you show respect for the bus driver?
17. Do you avoid playing with the emergency door, fire extinguisher, and first aid supplies?
18. Do you know the responsibilities of a school bus patrol?

SCHOOL BUS SAFETY - LEVEL C

CONCEPT I: GOING TO THE BUS STOP AND WAITING FOR THE BUS*

OBJECTIVE

The student should be able to demonstrate or list procedures for going to and waiting for the school bus safely.

CONTENT FOR DISCUSSION

Hazards experienced while walking to the bus stop and waiting for the bus can be avoided by--

1. Allowing enough time to walk to the bus stop without hurrying, and arriving at the bus stop no earlier than 5 minutes before the time the bus usually arrives.
2. Walking on the left facing traffic where there is no sidewalk.
3. Waiting well off the road at least one car length away, and not playing in such a way that someone might be pushed into the road or be forced to run into the road.
4. Looking out for young children because they do not recognize dangers.

ACTIVITIES

1. Working with Numbers.[1] Have students work the following problems.
   a. The bus stops for Phil at 7:45. He left home at 7:20. It usually takes him 10 minutes to walk to his bus stop. Will Phil arrive early or late? How many minutes did he have from the time he left home until time for the bus? Was this more or less time than it usually takes for the walk? What time should Phil leave to get to the stop in 10 minutes? (Answers: early; 25 minutes; more; 7:30)
   b. The school bus must make 15 stops to pick up children. At each stop, it usually takes 4 minutes for the children to board the bus. How many minutes does it take for the bus

*Note: This lesson can be integrated with other concepts in this unit.

to pick up all the children at all the stops? How many minutes would it take if the bus spent 5 minutes at two of the 15 stops waiting for late children?

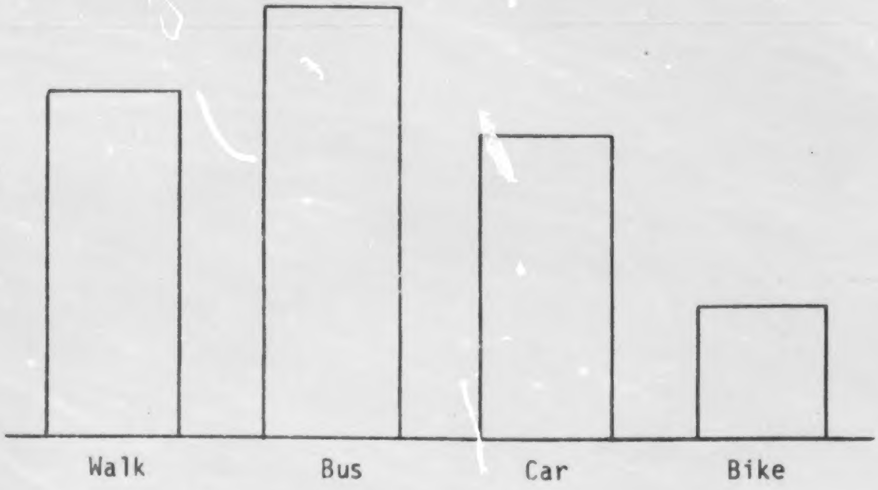
(Answers: 60 minutes; 62 minutes)

c. If there are 15 rows of seats on the school bus and the children sit three in a seat, how many children can sit in the bus? At times, children have to stand inside the bus because of the lack of seats. If all the seats are filled and seven children have to stand, how many children are on the bus?

(Answers: 45 children; 52 children)

The students can make up their own mathematical problems pertaining to the school bus and have their classmates work on the results. Variation: Divide the class into teams and have each team make up questions. One team asks a question. If a member of the opossing team answers correctly, his team gets a point; if the answer is incorrect, the team which asked the question gets the point.

2. Bus Survey. Make a survey of the class. Ask questions about the number of students who ride in a bus or car or who walk or drive a bicycle to school. Have the students develop other questions relating to school transportation. Construct a bar graph presenting the results.



Example of Bus Survey Graph

3. Story Starters.[1] Have the students complete and illustrate the following:

   a. Sandra and Karen were walking to the bus stop early one wintry morning. It was just barely light enough to see. Karen had on a bright red coat with reflectorized strips. Sandra was wearing a dark blue coat. Walking on the left they started to cross an intersection. An approaching car began to turn into their path. The driver saw Karen's coat, but he did not see Sandra and . . . .
   b. While waiting at the school bus stop one morning, Jim and Fred started playing with a football. They were throwing the ball back and forth to each other at the crowded bus stop. All of a sudden the ball flew into the street because Jim missed a pass. Fred sees the ball bounce in the street and . . . .
   c. It is the first day of school for Tony and his first time riding on the school bus. As he waits in line for the bus, two sixth grade boys start teasing him. They steal his cap and run across the street . . . .
   d. Brenda and her sister are walking to the school bus stop on the right hand side of the road. It is raining, and they are walking together under an umbrella. A car comes around the curve and . . . .

4. Vocabulary Activities. Use language arts activities with vocabulary list to emphasize traffic safety words.

Vocabulary List

accident
aisle
bus driver
caution
emergency
emergency exit
handrail
hazard
highway
pavement
railroad crossing
reflective tape
responsibility
safety
school bus
single file
traffic
twilight
weather
window

   a. Have students make up crossword puzzles using vocabulary words and other school bus safety words.
   b. Hidden Word Puzzle, master for reproduction #1 (page 258).

HIDDEN WORD PUZZLE

A	E	H	G	A	H	I	G	H	W	A	Y	G	O	Z	R	D	N
F	L	N	R	I	A	S	B	X	K	Z	F	K	S	O	T	A	J
G	A	F	B	U	N	Y	G	T	R	L	B	W	Y	C	N	W	V
J	C	O	H	Z	D	M	T	C	T	E	L	S	I	A	M	W	I
Y	C	N	E	G	R	E	M	E	G	S	V	F	H	N	S	V	X
L	I	C	H	P	A	R	L	D	F	X	F	J	I	O	D	H	C
I	D	M	K	B	I	E	K	V	E	A	W	O	V	S	O	O	P
D	E	O	C	V	L	A	X	M	R	E	S	P	S	X	R	L	W
P	N	J	E	D	B	M	D	T	F	V	E	T	Z	A	O	F	G
N	T	W	G	Y	Z	R	E	V	I	R	D	S	U	B	I	Y	H
S	C	H	O	O	L	B	U	S	G	A	W	J	Z	A	K	G	H

Find These Words:

handrail
bus driver
emergency
safety
traffic

school bus
window
aisle
accident
highway

HIDDEN WORD PUZZLE

A	E	H	G	A	H	I	G	H	W	A	Y	G	O	Z	R	D	N
F	L	N	R	I	A	S	B	X	K	Z	F	K	S	O	T	A	J
G	A	F	B	U	N	Y	G	T	R	L	B	W	Y	C	N	W	V
J	C	O	H	Z	D	M	T	C	T	E	L	S	I	A	M	W	I
Y	C	N	E	G	R	E	M	E	G	S	V	F	H	N	S	V	X
L	I	C	H	P	A	R	L	D	F	X	F	J	I	O	D	H	C
I	D	M	K	B	I	E	K	V	E	A	W	O	V	S	O	O	P
D	E	O	C	V	L	A	X	M	R	E	S	P	S	X	R	L	W
P	N	J	E	D	B	M	D	T	F	V	E	T	Z	A	O	F	G
N	T	W	G	Y	Z	R	E	V	I	R	D	S	U	B	I	Y	H
S	C	H	O	O	L	B	U	S	G	A	W	J	Z	A	K	G	H

ANSWER SHEET

FIND THESE WORDS:

handrail
bus driver
emergency
safety
traffic

school bus
window
aisle
accident
highway

SCHOOL BUS SAFETY - LEVEL C

CONCEPT II: ENTERING THE SCHOOL BUS*

OBJECTIVE

The student will be able to explain the safe procedure for entering the bus and will be able to identify possible hazards.

CONTENT FOR DISCUSSION

When entering the school bus, the student should--

1. Line up with the younger children in the front.
2. Step up to the bus after it has completely stopped and after the door has opened.
3. When it is necessary to cross the road to board the bus, one should follow these steps:
    a. Wait until the bus signals are operating.
    b. Look both ways making sure all vehicles have stopped.
    c. Then walk, do not run, across the yard.
    d. Cross at 4 meters (12 feet) in front of the bus, in full view of the driver.
4. Do not push or shove while waiting in line; leave space between each child.
5. Hold the handrail when stepping up into the bus because it is easy to lose one's balance carrying books, etc.
6. Take a seat as quickly and quietly as possible, and remain quiet.

When entering the school bus after school one should:

1. Follow the instructions of the principal and teachers in going to and entering the bus.
2. Walk quickly to the bus and line up.
3. Do not push or shove; leave a space between each child.
4. Hold the handrail. Take a seat, and remain quiet.

*Note: This lesson can be integrated with other concepts in this unit.

ACTIVITIES

1. What If . . . . Have students discuss what they would say to someone who says--
   - a. Why should younger children be in the front of the line?
   - b. Do you always know where the bus is going to stop? Why should you wait until the bus has stopped completely to step close to the bus?
   - c. I do not have to stop and check the traffic if I am in a line of kids, the first guy always does that!
   - d. Those little kids are always so slow getting on the bus that sometimes I feel like pushing them to make them hurry up.
   - e. I do not need to use the ole handrail! I have got too much to carry with my books and bat.
   - f. Why do I have to sit down right when I get on the bus? I like to talk to Sam in the front seat, and there is no place for me to sit near him. I won't fall, so why does it matter?
2. Safety Jumble.[1] Have students rearrange these jumbled sentences and indicate whether each sentence is true or false.
   - a. doors school bus for wait be opened to school the bus entering while. (true)
   - b. blow hand to one free horn keep the. (false)
   - c. children front line allow the the be smaller in to of. (true)
   - d. each between space leave child. (true)
   - e. promptly seat never take bus school entering the. (false)
3. Community Investigators. A committee can look into community traffic problems. Suggestions for improving conditions may be forwarded to local city councils. Some of the problems might include corners needing lights and/or traffic police, streets needing repair to facilitate transporation, and places needing traffic signs. Emphasis should be on the areas near where the bus stops daily to pick up and discharge students.

4. Ciphers. Have the students work the following problems to decode the hidden safety message. The code to use is a = 1, b = 2, c = 3, ...

Safety Message.

10	12	25	10	5	15		7	16	12		15	2	5
-9	×1	-2	-9	×5	+4		×3	+3	-7		+5	×4	×1
__	__	__	__	__	__		__	__	__		__	__	__

16	30	7	12	6	16	3	4
-8	-29	×2	-8	×3	-15	×3	×3
__	__	__	__	__	__	__	__

Answer: Always use the handrail

5. Measure It. Have the students measure off 4 meters (12 feet) to show how far the school bus should stop from children waiting for the bus. Have them pace out the distance so that they can develop distance judgment. How far is 4 meters? The height of three children in the class? The distance from the floor to the ceiling? Find other distances which are 4 meters.

6. Going to School around the World.[1] Have the students find out how children around the world get to school and how many countries have a "school bus" as a means of transportation. The class can select a specific region or country. Findings can be presented as exhibits and dramatizations.

7. Gas Saver?[1] Have the students research the following question: Does a school bus cut down on the number of vehicles in a given community? Students can interview parents, bus drivers, principals, and bus driver training instructors.

8. Public Bus vs School Bus.[1] Have the students tape-record interviews with people who use the public bus system and with students who ride the school bus. Ask both groups the same questions.

Examples are:

a. Why do you ride the bus?

b. How do you board the bus?

    (1) Do you wait until the bus has completely stopped before stepping toward the curb?

    (2) Do you wait a distance of at least 3 meters (10 feet) from the curb edge?

c. What do the other passengers do while riding the bus?

    (1) Do they talk loudly and distract the driver?

    (2) Does the bus driver ever tell them to be quiet?

9. Field Trip Experts.[1] The students can research exciting places to which teachers may want to take children on field trips by bus. This research can be advertised and made available to teachers of all other grades. Distances, travel routes, places to eat, places to park, and admission fees can all be included. A bulletin board in a prominent area, such as the lunchroom, may advertise these trips. Students can vote on which trips they would like to take.

10. Word Scramble. Have students unscramble school bus safety words in Word Scramble, master for reproduction #2 (p.265). In order, the answers for the 10 words are:

handrail
bus driver
emergency
safety
traffic
window
school
aisle
accident
highway

WORD SCRAMBLE

Directions: Unscramble the following words on school bus safety.

1. rhanlida
2. ubs vdreir
3. gyemceern
4. fyseat
5. frftcia
6. nwwdoi
7. olocsh
8. seila
9. naiccedt
10. hhyigaw

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SCHOOL BUS SAFETY - LEVEL C

CONCEPT III: PASSENGER BEHAVIOR ON THE SCHOOL BUS*

OBJECTIVE

The student will be able to identify ways that he can be a safe, courteous rider and will be able to explain how his actions influence the safety of the bus.

CONTENT FOR DISCUSSION

The passenger plays an important part in school bus safety. Safe driving depends on each passenger's cooperation. The passenger can help the driver by:

1. Riding the assigned school bus.
2. Taking a seat immediately after boarding and remaining seated throughout the trip. If all the seats are filled, the standing passenger should give his books to a seated passenger, face the front of the bus, and hold onto the backs of two seats. The passenger should not stand in the doorway.
3. Keeping feet, books, and other belongings out of the aisle.
4. Keeping the bus clean. Do not eat or drink on the bus. Scraps of food and paper can make the aisle slippery.
5. Not damaging the bus equipment. When damage is noted, report it to the driver so that it can be fixed.
6. Asking the driver's permission before opening a window.
7. Keeping head and arms inside the bus. Low-hanging branches and sudden stops can cause injuries.
8. Talking quietly to bus friends. Loud talking and laughter distract the driver. Pushing, screaming, and scuffling cause the driver's attention to be suddenly diverted from the road.
9. Giving the bus driver the same respect as a teacher. They have a big responsibility in seeing that their passengers get to school and home safely.

Note: This lesson can be integrated with other concepts in this unit.

10. Not talking to the driver while he is driving, except in an emergency. One should be especially quiet at railroad crossings in order to help the driver listen for trains.
11. Not playing with the emergency door. The door could come open and cause someone to fall out.
12. Not tampering with the fire extinguisher or first aid supplies. Both are on the bus so that the driver can use them in an emergency to protect and aid his passengers.
13. Staying in one's seat until the bus has stopped completely.
14. Staying away from the bus parking area during the school day. One should never reenter a bus during the school day without the permission of the principal.

ACTIVITIES

1. Vocabulary Activities. Use masters for reproduction #3 and #4 to emphasize vocabulary words important to traffic safety.
    a. Match Words with Definitions (p. 274).
    b. Words Tell the Story[1] (p. 276).
2. Helpful Reminders. Have the students make posters illustrating how they can help the bus driver.
3. Student Lawmakers. Have the students make their own set of rules for the bus and compare these with those listed in the content for discussion. Make a picture booklet of these rules to take home.
4. Writing a Story. Complete the following story starters:
    a. Judy liked to hang her head and arms out of the school bus . . . .
    b. Randy always sat with his feet in the aisle. Sally got up before the bus stopped and moved down the aisle. As the bus driver put on the brakes, she was thrown forward and . . . .
    c. Sharon had to stand up because there were no more seats. None of the kids around would hold her books. The bus driver slammed on his brakes . . . .
5. Creative Writing Activity. Have the students write and illustrate a story entitled "I Was a Bus Driver for a Day." Have them describe

how they would like their passengers to act and how people who misbehave make them feel.

6. Making Choices.[1] Have the students identify the dangers found in the Making Choices exercise, master for reproduction #5 (p. 277). Have them tell what a better choice would be and why their choice would be safer.

7. School Bus Cutout.[1] Have the students construct a large school bus out of heavy corrugated cardboard. Draw all the parts and paint it. Cut out windows and use with students' chairs to teach safety rules. Older students could use the cardboard box to teach bus safety to younger children.

8. Distraction Demonstration. Divide the class into two teams. Prepare a list of arithmetic activities such as adding a long list of figures or a series of complicated long division which require a lot of concentration. While one student tries to work one problem, two members of the other team try to distract him by laughing, clowning, telling jokes, etc. Time each student. The team whose members take the shortest time to finish the problems will win (or have members calculate the average time for their team). Discuss the importance of quiet when you are trying to concentrate. Driving requires a great deal of concentration. Relate the activity to bus safety.

9. Identifying Hazards. Have the class, or each student, write a play in which school bus hazards are identified. Here are some titles you can use:

   Front Seat Grabbers
   Paper Wads, Anyone?
   Hard-Headed Harry
   The Back Seat Gang
   Nobody's Listening

   The play can be staged with students or puppets.

10. Discussion Questions. Discuss the following questions:
    a. What would you require your riders to do if you were the driver?

b. Throwing paper wads and teasing friends may be fun, but what hazards are you creating?

c. Why should you as a rider be concerned about driving hazards? Are they not the driver's responsibilities?

11. Good Passenger of the Week. Have the bus drivers report good behavior that they see being practiced on the bus and how it helped the driver. Each bus or class could have a "Good Bus Passenger" each week.

12. Best Bus Award. Sponsor a schoolwide contest to determine the "Safest Bus" of the week. The safest may be chosen on the basis of drivers' comments, teachers' observations, and students' evaluations.

13. Safety Slogans. Have the students make bus safety posters using safety slogans or situations which occur on the bus. These could be placed around the bus loading area.

14. Do Gooder. Have a "Do Gooder Box." Students will observe behavior on their bus and will note safety rules which are being followed. The students will write on a slip of paper the rule being followed which they feel is most important and place the folded paper in the box. Results from the box can be used to create a "Positive Action" bulletin board.

15. Your Bus Route.[1] Have the students note the following details on the ride to or from school.

a. On what corners are street lights placed?
b. What are the colors of the various traffic signs?
c. How many traffic policemen are there on your route?
d. How many school crossing guards?
e. How many crossing guards are male? Female?
f. How many seats are there on your bus?
g. How many stops does your bus driver make?
h. How many students ride your school bus?
i. How long (time) does the average stop take?
j. How long does the total trip take?
k. Are there time differences on good and bad weather days?

A tally, graphs, or charts can be made to illustrate what the children noted.

16. Creative Comics. Have the students create a comic strip of cartoon characters in incidents which occur on the bus. Have the students note behavior on their own buses and give ideas for the strip.

17. Role-Play. Have a student portray a typical bus driver being interviewed by another student portraying a TV newscaster.

18. Face the Nation. Have a quiz show with an announcer and two panels of experts. Five experts should be on each panel. Have the rest of the class make up questions about school bus safety. The announcer will draw a question and read it to one panel; the panel has 60 seconds to answer the question. If the answer is incorrect or if time is called, the other panel is given the opportunity to answer the question for bonus points. The students who make up the questions will be responsible for calling time and determining if the answer is correct.

19. Front Page. Write a feature story for a local newspaper, magazine, or school publication. Possible topics are:
    School Bus Safety Violations School
    School Bus Safety Tips
    We All Work Together

20. You Heard It Here. Have several students tape-record a bus ride without the knowledge of their fellow passengers. Students may be surprised at the noise levels. Discuss the distractions.

21. The Year 2001.[1] Have the students design vehicles that might carry them to school in the year 2001. Students can construct models of their vehicles or draw what they will look like. Have students write descriptions of the vehicles and their safety features.

22. Sijo Poetry.[1] Have students write Sijo poetry, a form originated in 14th century Korea during the Yi Dynasty with six lines with six to eight syllables in each line. The students can write poems about experiences on the school bus or other related topics. An example of Sijo poetry:

Slowly fall the soft, soft snow
White as sugar, white as milk
White as lace and white as the foam
On the ocean's billowy waves.
Wash your face in it. Throw it.
I love the snow, don't you?
(Sixth grade child)

23. Go to the Head of the Bus. Have students play the game on pages 278 - 279 . Arrange chairs in the classroom to resemble seats in a bus. Choose one student to be the driver. Divide the rest of the class into two teams, and have them stand in two lines behind the bus. The driver will call out a question to the first member of each team. If the student answers correctly, he gets to "board" the bus and take the last seat. When the student next in line answers the question correctly, he takes the last seat and the players ahead of him move forward, etc. The team that has everyone move up to the driver's seat first wins.

24. Bus Patrol. If your school has a bus patrol, discuss how the members are chosen, what their responsibilities are, and why the patrol is needed (pp. 280-281). If your school does not have a bus patrol, ask the students if they think there is a need for one; if they think so, have a committee research the possibility of establishing a patrol. Another committee could interview other classes to determine if the patrol is needed and if it would have the support of the students.

25. Suggestions for Involving Parents. Involving the students' parents can increase the effectiveness of your school bus safety program. Below are some suggestions for parent involvement. Choose the suggestion which is most appropriate to your school's situation.
    a. Present the PTA film And Then It Happened, at a PTA meeting.
    b. Have a committee appointed by the PTA to investigate ways in which parents can promote bus safety.
    c. Send a questionnaire home with the students. Include information about bus safety and requests for parents to state their

opinions and suggestions. Some general questions are:

(1) What do you think is needed to make school buses safer?

(2) Would you be in favor of the school establishing a patrol to ride the bus, keep order, and help the driver watch for hazards?

d. Write a letter to inform and to solicit the support of parents. An information sheet and sample letter can be found at the end of this lesson, pages 282-284.

MATCH WORDS WITH DEFINITIONS

Directions: On the blanks write the words that fit each meaning. Then write the letters in the squares at the bottom of the page. This is an important school bus safety rule.

1. _ _ ☐ _ _ _ _ _ _ Person who is responsible for safely driving a school bus.
2. _ _ _ _ ☐ _ Freedom from harm or danger.
3. _ _ ☐ _ _ _ _ People, automobiles, bicycles, etc., coming and going along a way of travel.
4. _ _ _ _ _ _ ☐ A public road.
5. ☐ _ _ _ _ _ _ _ _ Bus used to carry children to and from school.
6. _ _ _ _ ☐ Passage between rows of seats in a bus.
7. _ ☐ _ _ _ _ _ _ Bar used to aid in boarding a bus.
8. _ _ _ _ _ _ _ ☐ An unfortunate, harmful happening.
9. _ _ ☐ _ _ _ _ _ _ Dangerous situation needing immediate action.
10. _ _ _ ☐ _ _ Opening in the wall of the bus to let in light and air.

Safety Rule

☐☐☐☐ ☐☐☐☐☐☐

ANSWER SHEET

MATCH WORDS WITH DEFINITIONS

Directions: On the blanks write the words that fit each meaning. Then write the letters in the squares at the bottom of the page. This is an important school bus safety rule.

1. BUS DRIVER Person who is responsible for safely driving a school bus.
2. SAFETY Freedom from harm or danger.
3. TRAFFIC People, automobiles, bicycles, etc., coming and going along a way of travel.
4. HIGHWAY A public road.
5. SCHOOL BUS Bus used to carry children to and from school.
6. AISLE Passage between rows of seats in a bus.
7. hANDRAIL Bar used to aid in boarding a bus.
8. ACCIDENT An unfortunate, harmful happening.
9. EMERGENCY Dangerous situation needing immediate action.
10. WINDOW Opening in the wall of the bus to let in light and air.

Safety Rule

STAY SEATED

WORDS TELL THE STORY

Fill in the spaces below using two describing words for each object named.

Example: long, yellow bus

soft, black seats

1. ____________, ____________ speed
2. ____________, ____________ wheel
3. ____________, ____________ wipers
4. ____________, ____________ doors
5. ____________, ____________ tires
6. ____________, ____________ horn
7. ____________, ____________ floor
8. ____________, ____________ lights
9. ____________, ____________ mirrors
10. ____________, ____________ steps
11. ____________, ____________ children
12. ____________, ____________ driver
13. ____________, ____________ street
14. ____________, ____________ handrail
15. ____________, ____________ intersection

MAKING CHOICES

There are many kinds of choices. We can choose between safe and unsafe things to do. Tell what the dangers are. Tell what a better choice would be, and why your choice would be safer.

1. George put his arms out the bus window.
2. Jack stood up before the bus stopped.
3. Jerry was teasing others in the car pool.
4. Mary started to get out on the street side of the car.
5. Terry crossed the street in the middle of the block.
6. Henry pushed ahead of others at the door to the bus.
7. Jimmie blocked the aisle, so others couldn't get in.
8. Sue ran down the aisle of the bus.

Here is something to remember: When we choose the right way, we choose the safe way.

Can you tell what it means?

MAKING CHOICES

There are many kinds of choices. We can choose between safe and unsafe things to do. Tell what the dangers are. Tell what a better choice would be, and why your choice would be safer.

1. George put his arms out the bus window.
2. Jack stood up before the bus stopped.
3. Jerry was teasing others in the car pool.
4. Mary started to get out on the street side of the car.
5. Terry crossed the street in the middle of the block.
6. Henry pushed ahead of others at the door to the bus.
7. Jimmie blocked the aisle, so others couldn't get in.
8. Sue ran down the aisle of the bus.

Here is something to remember: When we choose the right way, we choose the safe way.

Can you tell what it means?

GO TO THE HEAD OF THE BUS

Here are some sample questions. You may have the students make up questions of their own.

1. If there is no sidewalk, walk on the ___________, facing traffic.
2. What do you do first when you get on the bus? ____________________
3. True or false? Talk to the driver to keep him awake as he drives. ____________
4. Keep the aisle free of ______________________________.
5. Never stand ______________________________________.
6. Never take ______________________________________ on the bus.
7. When you get off the bus, go ____________________________.
8. If you drop something in front of the bus, what do you do? ____
9. If your home is on the left side of the road, where and when do you cross? ____
10. Do not throw ______________________________________ on the bus.
11. True or false? Throw all trash out the windows. ______________
12. When waiting for the bus in the darkness, you should wear ______________________________________.
13. At the bus stop, how far from the road should you wait? ____
14. Do not ______________________________________ at the bus stop.
15. The bus will stop __________ meters from the line of children at the bus stop.
16. True or false? Always run to the bus stop. ____________________
17. How can you prevent having to rush to meet the bus? ____
18. How should you treat the seats on the bus? ____
19. True or false? Always obey the bus driver. ____________________

20. True or false? Leave the bus in single file. ____________________

21. True or false? You should form a single line at the bus stop to board the bus. ____________________

22. When should you be especially quiet on the bus? ____________________

____

23. If you have to stand on the bus, where and how should you stand?

____

24. What is the purpose of the back door on the bus? ____________________

25. True or false? Try to see how many different people you can talk to on the bus each day. ____________________

26. True or false? You should never go behind the bus for any reason.

____

27. True or false? Remain seated until the bus has come to a complete stop. ____________________

Answers

1. Left
2. Take your seat
3. False
4. (Answers will vary)
5. Past the bar or in the stairwell
6. (Answers will vary)
7. Home immediately
8. Tell the driver, then go and get it
9. In front of the bus 4 meters or 1 car length after the road is clear
10. (Answers will vary)
11. False
12. Reflective clothing
13. Arm's length, at least
14. (Answers will vary)
15. 3
16. False
17. Allow enough time to get there
18. As if they are your own
19. True
20. True
21. True
22. At the intersections, railroad crossings
23. Facing front, behind the bar, holding on
24. Emergencies
25. False
26. True
27. True

SCHOOL BUS PATROLS[2]

QUALITIES OF A PATROL MEMBER.[2]

1. A member should be older (in a higher grade).
2. A member should live near the end of the bus route in order to be on the bus as long as possible.
3. A member should not be absent regularly.
4. A member should be courteous, helpful, confident, dependable, and cheerful while on duty; should adhere to safe practices while on or off duty; and should genuinely try to help others, and enjoy being a patrol.

RESPONSIBILITIES OF A PATROL MEMBER

Responsibilities may vary from school to school.

1. A member should supervise the loading of the bus in a safe, orderly manner. One member may remain outside the bus to maintain order and, if the group is large, to form pupils into a single line to facilitate rapid loading. A second member may be in the bus to supervise the seating of pupils and to help them store their books and other materials.
2. A member should check to determine if all pupils are aboard before the driver leaves the school ground or the highway loading zone.
3. A member should maintain order while the bus is en route. This would include reminding passengers:
    a. To remain seated while the bus is in motion, but to alight promptly after the vehicle has come to a complete stop.
    b. To refrain from unnecessarily loud, boisterous communication.
    c. To refrain from communicating with the driver while he is driving, except in emergencies.
    d. To keep all parts of bodies within the bus.
    e. To discourage any attempts by passengers to tamper with the emergency door during normal travel.
4. A member will help the driver safeguard pupils who must cross highways after alighting from a school bus or before boarding one. A member may perform this function by alighting from the vehicle in

advance of the passengers about to cross the highway. A member may accompany passengers to the front of the bus and remind them not to cross the highway until the driver, from a relatively far-seeing vantage point in the bus, indicates that a safe crossing is possible.

5. A member will aid pupils in using the emergency door when conditions make such use necessary and during emergency exit drills.
6. A member will promptly follow any special instructions given by the driver, especially those made necessary by emergency conditions.

SCHOOL BUS PASSENGER SAFETY

LOADING

1. While waiting to board your bus, make sure that you are safely off the road. Students should stand at least 6 meters (20 feet or 1 car length) from edge of pavement.
2. Many of you have to board a school bus in the dark. You should use some type of reflector to indicate where your driver is to stop and to help other motorists see you.
3. Do not push or shove while waiting to board a bus.
4. Never cross the roadway while waiting to board the bus.
5. You should not walk toward your bus while it is approaching. When your driver opens the door, you may board the bus. (Only then is your driver sure that all traffic has stopped.)
6. Before boarding your bus, check traffic in both directions. (Even though the law requires all vehicles to stop for school buses while they are loading or unloading, not all people obey laws.)
7. Do not push and shove while boarding the bus. Be sure to use the handrail.

RIDING

1. All passengers should be seated, if possible.
2. Never stand in the doorway.
3. Normal classroom conversation is expected on the bus; you should not talk loud, or shout, or otherwise distract the driver.
4. Do not throw paper or other objects while on the bus.
5. Keep your arms, feet, and head inside the bus at all times.
6. Never play with the back door.
7. Never transport animals on the bus.

Safety rules developed by the Department of Motor Vehicles.

8. Riding a school bus is a privilege. This privilege can be taken from you if you demonstrate inappropriate behavior while on your bus. (This has been court-tested.)

UNLOADING

1. Remain seated until the bus has come to a complete stop.
2. Use the handrail while leaving the bus.
3. You should never go behind the bus for any reason. (Your driver cannot see you.)
4. Do not linger around after leaving the bus. Go straight to your home.
5. If your home is on the left side of the roadway you should cross one car length in front of the bus. Make sure you check left and right before and as you cross the roadway.
6. If for any reason you are not going straight home, make sure you notify the driver. Example: "I'm going home with a neighbor instead of going home as usual."

AT SCHOOL

1. Do not run to board the bus when school lets out. Remember, many parents drive to school to pick up their children. Board your bus in an orderly manner.
2. If you are riding a bus other than the one you are assigned to, make sure you have authorization from the principal.
3. Do not damage or deface bus. Your parents helped pay for the bus in which you ride, and they can be billed for damages done by you to a bus.

Dear Parents:

We are sending you a copy of "School Bus Passenger," so that you may join us in the bus safety program to protect your child.

Go over the bus safety rules with your child. Please remind your child that thoughtless behavior on the bus can cause a serious accident. The child who continually endangers others by misbehaving on the bus can be denied the privilege of riding the bus. This would mean that the parents would have to find another way to get their child to and from school.

Join with us in the school bus safety program. A parents safety committee will be formed to help identify and solve safety problems.

Please feel free to call the school if you have questions or suggestions.

I have received and read the attached letter concerning the bus safety program. I have discussed this with my child.

Parent's signature ____________________ ________________________

I would be interested in being a member of a parents safety committee:
__________ yes, __________ no.

I offer these comments or suggestions:

CONCEPT IV: LEAVING THE SCHOOL BUS SAFELY*

OBJECTIVE

The student should be able to demonstrate or explain the proper procedure for leaving the bus.

CONTENT FOR DISCUSSION

Most school bus accidents resulting in injury or death occur as students go to or from the bus. The combined factors of a pedestrian and a stopped vehicle on the road make exiting the school bus especially dangerous. Children can be injured when exiting at school as well as at the bus stop. The following steps can reduce chances of injury.

1. Remain seated until the bus has stopped completely.
2. Those in the front should get off first. Walk in single file.
3. Do not try to open the door. Wait for the driver to open it.
4. Use the handrail when stepping off, move quickly away from the bus, and do not try to return to the bus. Children have been crushed under the wheels of the bus when they have fallen near the steps. If something is dropped, wait until the bus has moved completely away before trying to get it.
5. If it is necessary to cross the street after leaving the bus, these steps should be followed.
    a. Tell the bus driver that you are going to cross the street.
    b. Take 15 steps in front of the bus before starting to cross, because the driver cannot see you if you are too close to the front of the bus.
    c. Check for traffic. Cars are required by law to stop when a school bus is unloading on the road, but it is up to the student to make sure that there is no traffic.
    d. Walk; do not run.
6. Leave the bus only at your designated stop. Drivers are not permitted to let passengers off at stores to make purchases, etc.

*Note: This lesson can be integrated with other concepts in this unit.

ACTIVITIES

1. Hands On! Take the class to a parked bus. Let each student sit in the driver's seat and adjust the side and rearview mirrors. Have other students stand around the bus. The driver must try to identify as many of the students as he can see by using his mirrors in a normal driving position. Have the students identify "blindspots" as the places where they cannot see students. (Note: Seats may need to be adjusted and/or pillows added to enable students to see through rearview mirror.)

   Discuss the following questions with the students:
   a. What are the times when a person might be in a driver's blindspot?
   b. What should a person do to keep from being in a blindspot? (Include moving quickly away from the bus, stepping 15 steps ahead of the bus, etc.)

2. Inertia Experiment. Have students design experiments showing why they should remain seated until the bus has completely stopped. One experiment could be to place a wind-up car with blocks stacked on top of it inside a moving wagon; make the wagon stop suddenly, and observe the effects on the car and the blocks. Discuss that an object which is already moving has less resistance to changes in motion than an object which is not moving. Seated passengers do not feel the effects of the forward thrust of braking as much as passengers who are moving down the aisle. Often the moving passengers are thrown forward and lose their balance.

3. Efficiency Experts. Have an experiment to resolve the following question: Would letting those in front get off first be more efficient as well as safer? (This may require practice for the students to follow the plans for getting off the bus efficiently.)

4. Who Looks Out for You? Discuss reasons why drivers of cars might not stop for a stopped school bus. (Reasons might include drunken drivers, drivers who are momentarily distracted, speeding cars which cannot slow down in time, buses being hidden by curve, hill, bright sunlight, or bad weather.)

5. Color Code. Have students use the color codes on the master for reproduction #6, Look Both Directions (p. 288).

6. Checklist.[1] Have students complete the Checklist for Bus Conduct, master for reproduction #7 (p. 289). Students should be given this list periodically. Results could be compared.

7. Complete the Story. Have students complete the following story starter: Jimmy slowly stepped off the school bus. It was very difficult for him to carry the heavy load that he had. Just as he got in front of the bus, he dropped his lunch pail . . . .

8. Candid Camera.[1] Have a group of students take candid pictures at the bus stop of students entering the bus, riding the bus, and exiting. These pictures can be used as bases for stories, bulletin boards, and dramatizations.

9. Language Art Activities.

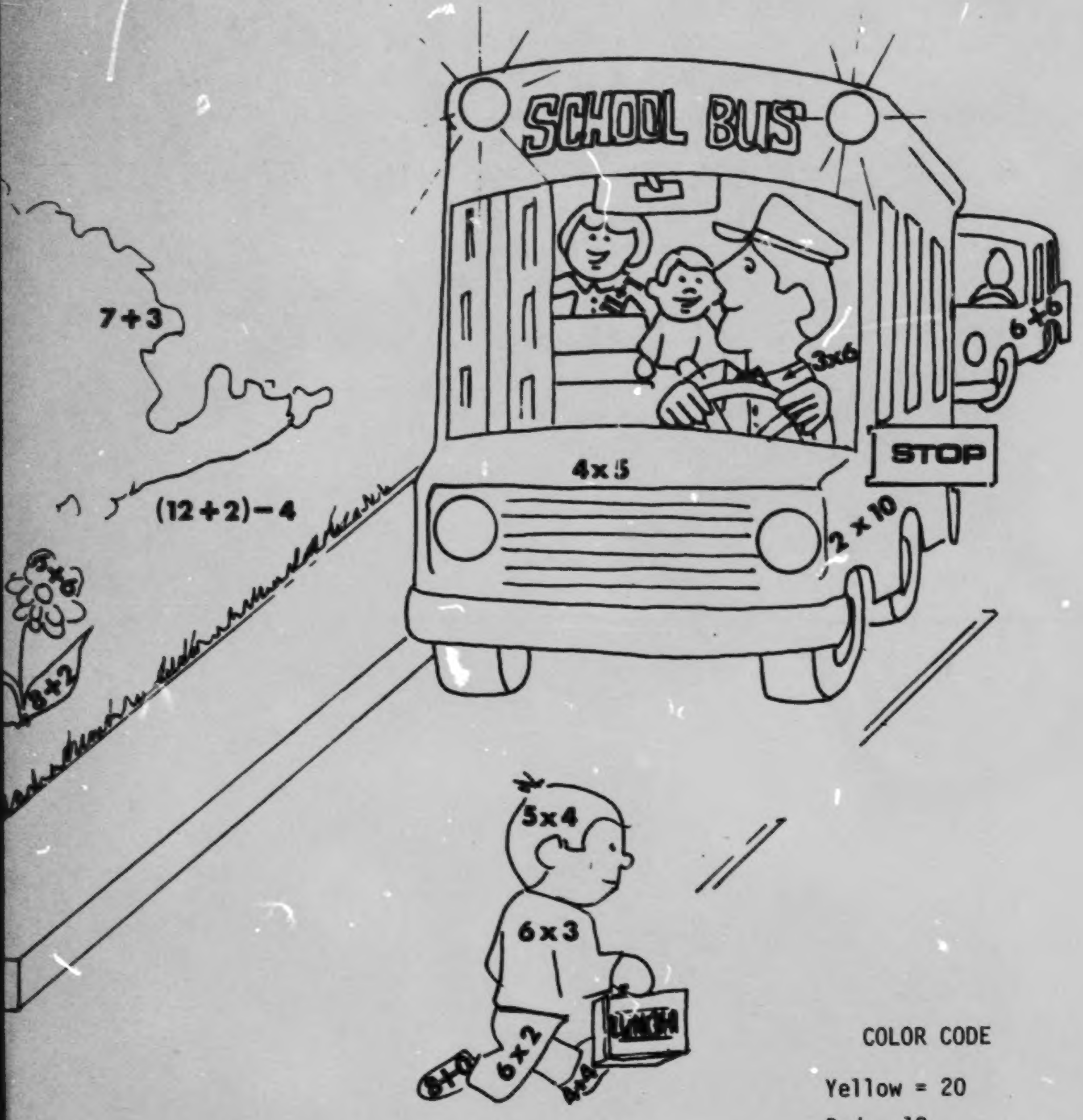
   Safe-O (p. 290)

   Fun with Words[1], master for reproduction #8, p. 291 ;

   Unscramble the Words, master for reproduction #9, p. 292 ; answer sheet, p. 293 .

   Crossword Puzzle, master for reproduction #10, p. 294 ; answer sheet p. 295 .

Look In Both Directions


SCHOOL BUS
7+3
(12+2)-4
5+5
8+2
3x6
6+6
4x5
STOP
2x10
5x4
6x3
6x2
8+0
4+4
LUNCH

COLOR CODE

Yellow = 20
Red = 18
Blue = 12
Brown = 8
Green = 10

CHECKLIST FOR SCHOOL BUS CONDUCT

		Yes	No
1.	Were you ready on time?	___	___
2.	Did you stay at least an arm's length away from the curb?	___	___
3.	At the bus stop, did you play in the street?	___	___
4.	Did you wait until your bus came to a full stop?	___	___
5.	Did you wait for the bus door to open?	___	___
6.	Did you keep one hand free to use the handrail?	___	___
7.	Did you take your seat promptly?	___	___
8.	Did you stay quietly in your seat?	___	___
9.	Did you save homework for later?	___	___
10.	Did you keep your arms and legs out of aisles?	___	___
11.	Did you act as you would in the classroom?	___	___
12.	Did you remain seated while the bus was moving?	___	___
13.	Did you avoid rolling objects, obstructing the path, spilling lunch, and throwing objects?	___	___
14.	Did you avoid talking to the driver, except in emergencies?	___	___
15.	Did you keep your head, arms, and hands inside the bus?	___	___
16.	Did you damage bus equipment, or report to the driver damage done to the bus by others?	___	___
17.	Did you walk out single file when leaving the bus?	___	___
18.	Did you use the handrail when stepping off and move quickly from the bus?	___	___
19.	Did you check for traffic when leaving the bus?	___	___
20.	Were you standing? If so, did you put down your books and hold onto the backs of two seats?	___	___

SAFE-O

S	a	f	e	O
emergency	listen	aisle	bus number	seating capacity
handrail	quietly	windows	blindspots	bus patrol
concentrate	manners	driver	emergency exit	trash
dangerous	traffic	single file	railroad crossing	bus driver
pollution	safety	handrail	left-hand side	traffic signals

Directions: Use these words or any other words that the class may learn during this unit to fill out the Safe-O cards. Let the students fill out the words on blank cards, or you may produce cards with the words on them. Questions should be devised that use these words as answers; for example, "What are the places called around the bus where children cannot be seen?" (blindspots) The game uses the same principle as Bingo.

FUN WITH WORDS

List words that show action (verbs), names (nouns), or describe (adjectives) the situation below:

Walking to the Bus	At the Bus Stop	Riding on the Bus	Exiting from the Bus	The Bus

UNSCRAMBLE THE WORDS

Directions: The following words are related to bus safety, but they have been scrambled. Unscramble them to find the real words.

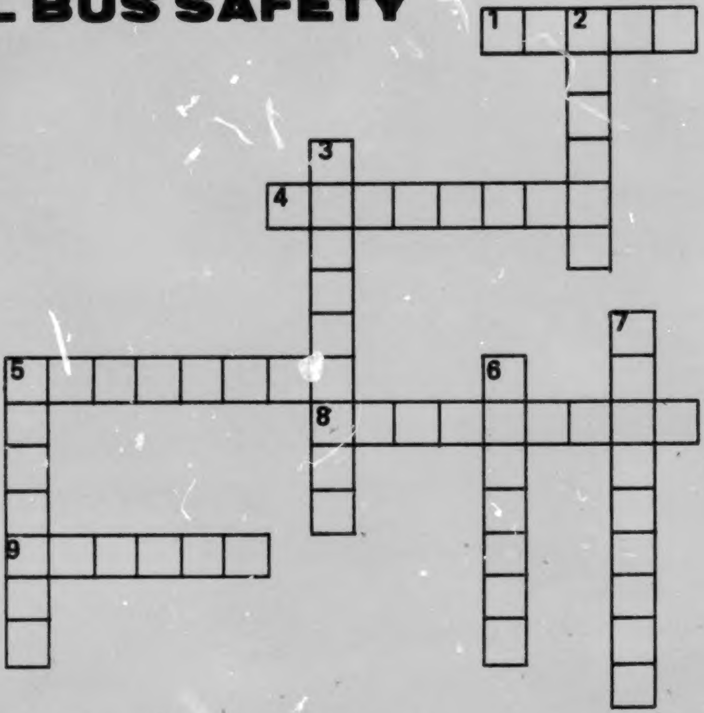
1. tayfse
2. lsoohc sub
3. ubs brnmue
4. arhlinad
5. gecreynem rood
6. bsu lupnotlio
7. usb srmnaen
8. gslien leif
9. ktla tqiluey
10. sbu rrdevi
11. ersenegin
12. ncrgossi augrd
13. ubs vdrire
14. lotrapnem
15. tsafey

ANSWER SHEET

UNSCRAMBLE THE WORDS

1.	tayfse	(1. *safety)*
2.	lsoohc sub	(2. *school bus)*
3.	ubs brnmue	(3. *bus number)*
4.	arhlinad	(4. *handrail)*
5.	gecreynem rood	(5. *emergency door)*
6.	bsu lupnotllio	(6. *bus pollution)*
7.	usb srmnaen	(7. *bus manners)*
8.	gslien leif	(8. *single file)*
9.	ktla tqiluey	(9. *talk quietly)*
10.	sbu rrdevi	(10. *bus driver)*
11.	ersenegin	(11. *engineers)*
12.	ncrgossi augrd	(12. *crossing guard)*
13.	ubs vdrire	(13. *bus driver)*
14.	lotrapnem	(14. *patrolmen)*
15.	tsafey	(15. *safety)*

SCHOOL BUS SAFETY



Across

1 Keep feet and books out of the ______.

4 You can prevent an______on the school bus if you obey the rules.

5 Hold onto the______as you step onto the bus.

8 Help the______by keeping quite on the bus.

9 Don't put your hands, arms, and head out of the______.

Down

2 Learn and obey the school bus ______ rules.

3 The______should stop 10 feet from the children waiting for the bus.

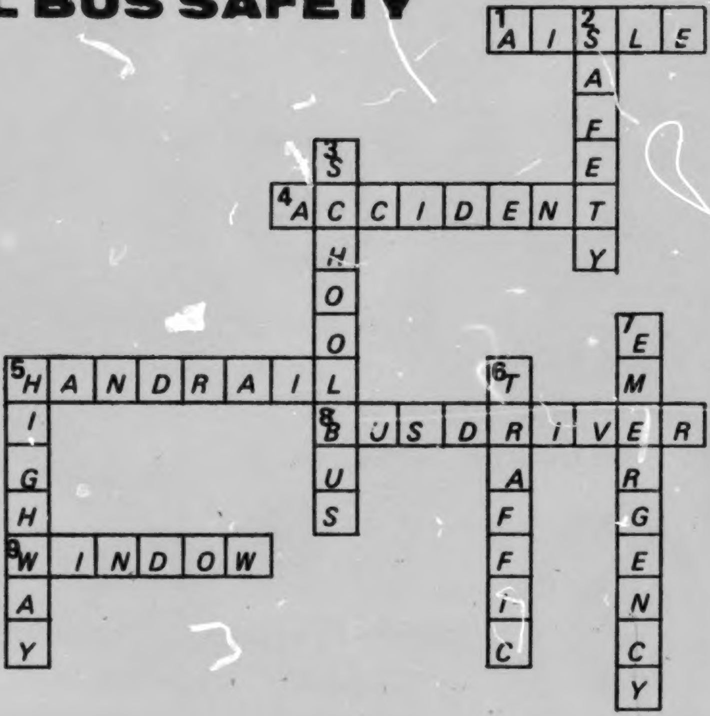
5 All children should form a line well away from the______while waiting for the bus.

6 Stay well away from the______ while waiting for the bus.

7 Learn how to exit the bus in case of an______.

ANSWER SHEET

SCHOOL BUS SAFETY


1 AISLE
2 SAFETY
3 SCHOOL BUS
4 ACCIDENT
5 HANDRAIL
5 HIGHWAY
6 TRAFFIC
7 EMERGENCY
8 BUS DRIVER
9 WINDOW

Across

1 Keep feet and books out of the ______.

4 You can prevent an______on the school bus if you obey the rules.

5 Hold onto the______as you step onto the bus.

8 Help the______by keeping quite on the bus.

9 Don't put your hands, arms, and head out of the______.

Down

2 Learn and obey the school bus ______ rules.

3 The______should stop 10 feet from the children waiting for the bus.

5 All children should form a line well away from the______while waiting for the bus.

6 Stay well away from the______ while waiting for the bus.

7 Learn how to exit the bus in case of an______.

CONCEPT V: LEAVING THE BUS IN EMERGENCY SITUATIONS*

OBJECTIVE

The student will be able to explain and demonstrate safe procedures for exiting in an emergency.

CONTENT FOR DISCUSSION

Knowing how to exit the bus safely in an emergency can save lives and prevent injuries. In Mountain Lake Park, Maryland, seven children were killed when their bus stalled on the railroad tracks. The children all rushed to the front door instead of using the emergency door. Emergency procedures vary; therefore, a school bus driver or the principal should demonstrate the established procedures in an actual school bus. The students should be shown how to open the emergency door, and they should practice exit plans for various situations--where the front door is blocked, the emergency door is blocked, or both doors are available for use. The students should be shown the emergency helps which are part of the school bus equipment--such as fire extinguishers, flashing lights, reflectors, flares, and first aid kits.

Some general rules for emergency exiting are:

1. Keep calm; panicking causes accidents.
2. Take short steps; do not run.
3. Do not push; pushing will only delay your getting out, and someone might fall and be injured.
4. The passengers in the seats nearest the door(s) being used should start out first.

ACTIVITIES

1. Emergency Procedures. Have the bus driver demonstrate emergency procedures in an actual bus.

*Note: This lesson can be integrated with other concepts in this unit.

2. On-the-Spot Reporter. Have students interview the principal or the person in charge of school bus drivers about the types of accidents that have or may occur on buses.

3. Play It Safe. Have the students make up puppet stories or write plays about school bus safety and emergency situations.

4. The Three E's. Make up "nonsense" poetry using the three E's--Emergency, Entrance, Exit.

5. Emergency Practice. Give the students a list of possible emergency situations such as wrecks, blowouts, fires, bus failures, the bus getting stuck, and the bus sliding into a ditch because of snow or rainy weather. Ask the students to list the emergency procedures for each situation or act out a skit depicting the situation.

6. Compare. Have the students compare emergency exits and procedures used for a car and a bus. List advantages and disadvantages of each.

7. Research Topics.[1] Have students research the following questions: Do safety devices belong on school buses? If so, what kind are there now? Are they effective? What kinds will be available in the future?

RESOURCE LIST

ORGANIZATIONS

Aetna Casualty and Surety Company, Driver Education Services, 151 Farmington Avenue, Hartford, Connecticut 06115.

Allstate Insurance Company, 7770 Frontage Road, Skokie, Illinois 60076.

American Automobile Association, 1712 G Street NW., Washington, D. C. 20006.

American Automobile Association-North Carolina, Carolina Motor Club, Inc., 701-3 South Tryon St., P.O. Box 60, Charlotte, North Carolina 28202.

Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005.

National Bicycle Dealers Association, 29025 Euclid Avenue, Wickliffe, Ohio 44092.

National Education Association, American Association for Health, Physical Education and Recreation, 1201 16th Street NW., Washington, D. C. 20036.

National 4-H Service Committee, Inc., Program Services, 150 North Wacker Drive, Chicago, Illinois 60606.

National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

North Carolina Department of Motor Vehicles, Traffic Safety Education Division, 1100 New Bern Avenue, Raleigh, North Carolina 27611.

North Carolina Department of Public Instruction, Education Building, Raleigh, North Carolina 27611.

North Carolina Department of Transportation, Bicycle Coordinator, P.O. Box 25201, Raleigh, North Carolina 27611 (for bikeways information).

North Carolina State University, Agricultural Extension Service, Department of Agricultural Information, Box 5037, Raleigh North Carolina 27607.

Schwinn Bicycle Company, 1856 Kastner Avenue, Chicago, Illinois 60635.

University of North Carolina at Chapel Hill, Highway Safety Research Center, Craige Trailer Park, Chapel Hill, North Carolina 27514.

The Wheelmen, 6239 Anauista, Flint, Michigan 48507.

RESOURCE LIST - SCHOOL BUS SAFETY

FILMS

Bus Driver's Helpers. (1968, 16 mm, color, 10 min.) Explains proper school bus conduct to elementary pupils. Available for purchase from AIMS Instructional Media Services, Inc., P.O. Box 1010, Hollywood, California 90028.

How To Board a School Bus. (1969, 16 mm, b&w, 9-1/2 min.) Aimed at the primary child, this film outlines safety features for children who ride the school bus from their rural homes to school. Available from New Zealand National Film Unit, Darlington Road, Willington 3, New Zealand.

Riding Your School Bus. (1973, 16 mm, color, 9 min.) Children are shown using safety practices on the way to their bus stop, while getting on and off the bus, and during the bus ride. Available from Virginia Department of Education, Film Production Service, P.O. Box 6Q, Richmond, Virginia 23216.

School Bus Patrol. (1969, color & b&w, 14-1/2 min.) Shows how a school bus patrol operates. Available for purchase or loan from American Automobile Association Foundation for Traffic Safety, 1712 G Street, NW., Washington, D.C. 20006.

School Bus Safety With Strings Attached. (1964, 16 mm, b&w, 18 min.) Using folding chairs and student volunteers, the narrator creates a hilarious school bus ride to demonstrate the rules of passenger safety and etiquette. Available for purchase from National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611. Stock No., 278.23.

FILMSTRIPS

Get 'em Out Safely. (1972, 2x2 slides, w/script, color, 30 slides) Gives bus drivers step-by-step pointers covering major aspects of emergency evacuation, including prior planning and dry-run drills for school children. Available from National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

School Bus Safety - Loading and Unloading. (1972, 2x2 slides, color, w/script, 30 slides) Points out the special hazards inherent in transporting youngsters and reviews safe procedures designed to avert those dangers. Available from the National Safety Council, 425 North Michigan Avenue, Chicago, Illinois, 60611.

Your Adventures in Traffic Safety, Part 4. Professional Arts, Inc., 1752 Parrott Drive, San Mateo, California 94402.

BOOKS FOR TEACHERS

School Transportation--A Guide for Supervisors. How to organize and administer a school bus safety program; 64 pages, $3.50 each. American Automobile Association, Carolina Motor Club, 701-3 South Tryon Street, P.O. Box 60, Charlotte, North Carolina 28202.

Teacher's Triptik. Your guide for the traffic safety program; for grades 1-9. American Automobile Association, Carolina Motor Club, 701-3 South Tryon Street, P.O. Box 60, Charlotte, North Carolina 28202.

BOOKS FOR STUDENTS

Beim, Jerrold. Andy and the School Bus.

Conkling, Fleur. The Bingity Bangity School Bus.

Fine, Aaron. The School Bus Picnic.

How Do You Go To School? Kilby Associates, P.O. Box 1113, Pendleton, Oregon 97801.

Schave, C. R. Stop-Look-Listen.

BOOKLETS, LEAFLETS, AND MAGAZINES

School Bus Patrol. Student participation in safe operation of school buses. American Automobile Association, 1712 G Street, NW., Washington, D.C. 20006.

INSTRUCTIONAL MATERIALS

How Do You Go To School? (Bus Safety). Instructive Devices, Inc., Pawtucket, Rhode Island 02860. Packet includes:

1 - 35 mm filmstrip
1 - sing-a-long cassette
30 - cartoon booklets
1 - LP record
1 - talk-a-long cassette
12 - safety posters
Teaching Guide

This program covers 22 important rules for school bus safety in song, verse, and narration.

School Bus Safety Set No. 104. A series of 9 study prints. Each print contains teaching aids and suggested activities printed on the back. Walt Disney Study Prints, 545 Cedar Lane, Teaneck, New Jersey 60068.

PASSENGER SAFETY

Level C

PASSENGER SAFETY UNIT - LEVEL C

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PASSENGER SAFETY - LEVEL C

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PASSENGER SAFETY - LEVEL C

INTRODUCTION

How many times a day do your students perform the simple act of opening a car door? It's a simple act that requires a few simple safety habits. This unit is designed so that you may help your students develop these and other passenger safety habits. One of the most important habits is the use of the safety belt. Countless governmental, private, and university studies have proven that safety belts could save approximately 8,000 lives a year and prevent one-third of the severe injuries and innumerable minor injuries.

Safety belts should be worn at all times. Three out of four accidents happen within 40 kilometers (25 miles) of home, with many children being involved. Children, as well as adults, who are passengers in cars should always wear a safety belt. Passengers, especially children, should remember always to take safety with them when they get into a car; and it is easy to take safety with them if they follow good safety practices like wearing safety belts.

It is the goal of this unit to teach good passenger behavior for students entering, exiting, and riding in a car and to aid in the development of the students' awareness of safety as a responsibility for themselves and others. This unit is also presented so that the teachers can assist in the development of the skills necessary for the desired behavior in children as passengers in a car.

UNIT OBJECTIVES

1. To develop responsible, safe behavior in children entering, leaving, and riding in an automobile by:
   - Informing the children of recommended procedures for entering, exiting, and riding in a car.
   - Enabling the children to assess possible dangers and to form good habits to avoid or respond to those dangers.

2. To stress the importance of wearing safety belts by:

-Informing the children of the reasons for wearing safety belts
-Enabling the children to identify and avoid hazardous activities while riding in a car and to follow recommended procedures of safety belt usage.

PASSENGER SAFETY - LEVEL C

UNIT CHECKLIST FOR TEACHERS

This Passenger Safety Unit Checklist is provided as a guide to assist you in determining your students' knowledge of passenger safety practices.

1. Do your students exit and enter a car from the curb side?
2. Do they wear safety belts at all times?
3. Are their safety belts properly adjusted?
4. Can your students give reasons for wearing safety belts?
5. Do your students ride quietly in a car and avoid distracting the driver?
6. Do your students look after younger children to keep them safe and quiet?
7. Do they put books and packages on the floor?
8. Do they help the driver by watching out for traffic and informational signs, rather than distract him?
9. Do they remain seated until the car has stopped before attempting to exit?

RATE YOURSELF AS A PASSENGER

1. Do you exit and enter a car from the curb side?
2. Do you wear a safety belt at all times?
3. Are your safety belts properly adjusted?
4. Can you give reasons for wearing safety belts?
5. Do you ride quietly in a car and avoid distracting the driver?
6. Do you look after younger children to keep them safe and quiet?
7. Do you put books and packages on the floor?
8. Do you help the driver by watching out for traffic and informational signs, rather than distract him?
9. Do you remain seated until the car has stopped before attempting to exit?

PASSENGER SAFETY - LEVEL C

CONCEPT I: ENTERING AND EXITING

OBJECTIVE

The student will be able to explain or demonstrate the correct procedures for entering and exiting from a car.

CONTENT FOR DISCUSSION

Passengers should always enter and exit the car on the curb side. A street side entry or exit places the person in a very vulnerable position. A passing car could hit the person or the open door. After entering, one should shut the door securely, lock it, and fasten the safety belt. After exiting, one should walk to the nearest intersection to cross the street; one should never try to cross between parked cars. If the student thinks that it is absolutely necessary to exit on the street side, he should remember the extra dangers he is facing. He should first check for traffic, open the door 15 to 20 centimeters (6 to 8 inches), and again check for traffic. He should then get out and move to the back of the car and to the nearest sidewalk as quickly as possible. He should not cross the street from the car side or from between parked cars.

ACTIVITIES

1. Introduction. Discuss the following questions:
    a. Why should passengers get out on the curb side even if they are sitting next to a street side door?
    b. Is sliding across the seat to get out worth the extra trouble?
    c. What can you do to make sure your younger brothers or sisters enter and exit the car safely?
    d. If you were a parent taking your child to school, would you allow him to get out of the car on the street side? Why?
2. Act It Out.[1] Role-play in the classroom with chairs arranged like a car, or demonstrate with an actual car the procedures for entering and exiting a parked car.

3. Show Time. Have students write a skit about correct and incorrect ways of entering and exiting a car.

4. Decisionmaking.[1] Distribute copies of masters for reproduction #1-#5, The Decision is Yours (pp. 317 - 321), to the class. Have each student write a paragraph explaining the decision that he would make in the situation. Discuss each situation with the class.

5. Safety Committee.[1] Assign a committee to watch cars arriving at and leaving the school. Record whether children enter and exit from them properly. Make a chart to determine whether violations of safety rules increase or decrease.

6. Neighborhood Survey. Have students survey different areas of the neighborhood (parking lots, downtown areas) to see if people follow the proper procedure. This activity could be done over a given time period, and students should note correct and incorect actions.

7. Loading Zone. If your school does not have a marked loading and unloading zone, make a survey to determine where one should be located. If one is designated, make a survey to determine if it is in the best possible location, and note existing hazards. Observe whether parents use the zones properly when bringing or picking up their children.

THE DECISION IS YOURS

"Race you to the building," shouted Rick to Jamie and David as Mr. Smith stopped the car in front of the school. The race was on. All three boys opened separate doors; Jamie started to step out. "No fair. I'm in the street. Cancel the race." shouted Jamie as he closed the door and scooted out of the car on the curb side. Why did Jamie cancel the race?

THE DECISION IS YOURS

Glenn, Alan, and Tracy were returning home from a school program. Glenn's father had parked the car and was waiting for the children. As they reached the car, Glenn opened the front door for Tracy. Alan opened the back door, sat down, and started to close the door. "Hey! Wait for me," shouted Glenn. "Oh, go around," said Alan. "No, Alan, scoot over!" said Glenn. How do you explain Glenn's attitude? Is he right or wrong? Explain why.

THE DECISION IS YOURS

Dale's mother always picked up him and his friend Ricky after their scout meetings. Ricky reached the car first, entered the car on the curb side, closed and locked the door, and fastened the seat belt. Dale was late arriving at the car and his mother was in a hurry. "Go around to the other side," his mother called. Dale dashed around to the other side of the car. As he did so, a passing motorist angrily blew his horn as he swerved to avoid hitting Dale. Who was at fault and why?

THE DECISION IS YOURS

Sally's mother was in a hurry so she parked across the street from the school. Sally was sitting on the left-hand side in the back because the right-hand side was full with baby brother's stroller that was left there from yesterday's trip to the store. It was raining and Sally opened the door and ran across the street. She just barely made it to the sidewalk. An oncoming car couldn't see her very well because of the rain and because she crossed where he didn't expect her to cross. You decide; what should Sally have done?

THE DECISION IS YOURS

The following is a list of procedures for entering a car. In the blank spaces, write why you think it is necessary to follow these procedures. What might happen if you did not follow these procedures?

1. Open the door on the curb side.

2. Close the door securely and lock it.

3. Fasten the safety belt and shoulder harness if appropriate.

PASSENGER SAFETY - LEVEL C

CONCEPT II: ADVANTAGES OF WEARING SAFETY BELTS

OBJECTIVE

The student will be able to identify and explain the advantages of wearing safety belts.

CONTENT FC.. DISCUSSION

The advantages of wearing safety belts are listed here.

1. They save lives and prevent injuries. Governmental, private, and university agencies have proven that safety belts could save 8,000 lives a year, reduce severe injuries by a third, and eliminate or minimize innumerable minor injuries. In any kind of accident, unbelted occupants in the front seat are twice as likely to be killed or severely injured as lap belt users. In accidents such as rollovers where the point of impact is unspecified, safety belt users are two and one-half times more likely to escape death or serious injury. The forces in an accident are so strong that a person can be thrown forward at a force equal to 30 times his normal weight. If a person weighs 68 kilograms (150 pounds), the weight during a collision would rise to about 2,039 kilograms (4,500 pounds) or about the weight of a medium-sized car. With these kinds of forces involved in car accidents, unrestrained passengers have few chances to escape injury. Although many people think that it is safer to be "thrown clear" than to wear safety belts, they fail to realize that the possibility of surviving these forces outside of the car--whether being thrown into the air or out along the ground--is slim. Other people are afraid of being "trapped" in a car in an accident involving fire or submersion. These accidents are extremely rare, and even in these accidents the chances of survival are increased by wearing safety belts because they prevent one from losing consciousness. Wearing the lap belt prevents one from plunging through the windshield, being thrown from the car, scraping along the ground, and being crushed by the car.

The lap belt keeps the driver in his seat where he can control the car. Lap belts used with shoulder harnesses make the passenger almost invulnerable. The shoulder-lap combination prevents facial and upper torso injuries resulting from striking the steering wheel, dashboard, and windshield.

2. They reduce fatigue by maintaining good posture and by saving muscles from straining to hold the body rigid while swaying around curves and turns and while making stops.
3. They free the driver from distractions of passengers moving around in the car, especially young children.
4. They give one a feeling of satisfaction in knowing that he is protecting himself.
5. They help serve as a reminder to be a safe passenger.

ACTIVITIES

1. Audio Filmstrip. Your Safety Adventures in Traffic, Part IV. Check for appropriate grade; it may be too elementary. (See resource list for more information on this and other related films.)

2. Who Needs Them? Discuss with students the advantages of wearing safety belts and the validity of the reasons that people give for not wearing them. Discuss the importance of bit in regard to safety belt usage.

3. Facts and Myths.[1] Make copies of masters for reproduction #6 and #7 (pp. 330 - 333) and distribute them to the students. Ask them to read the statements and write a paragraph indicating whether each statement is a fact or myth. Answers are included as masters #6a and #7a on pages 331 and 333 .

4. Who Needs These?[2] "Who Needs the Silly Things?," pages 326 - 327 , is a short story about a family whose father insisted that safety belts be installed in the car before they began their vacation. The first day of the vacation was spent having the belts installed, so the family was cross with the father. The members of the family changed

their minds on their journey home as the belts saved their lives. Discuss the following questions. Have you ever felt the same way as Nancy about safety belts? What caused the wreck? What are some clues in the story about the forces involved in a wreck?

5. Police Visit. Ask a police officer to speak to the class on the forces affecting passengers in a sudden stop or collision. Note: Ask the policeman to leave his gun, club, etc., at the office, because students are easily distracted by such equipment.

6. Accident Facts. Have the students collect state and national accident statistics on passengers with and without safety belts. Make a chart and compare these with local statistics.

7. Sudden Stops. Have the students create a mural depicting situations where a car might have to stop quickly.

8. Role-Play. Have the students role-play a trip in which the family wears safety belts and a trip in which the family does not. Emphasize how safety belts aid the driver and reduce fatigue.

9. Pillow Talk.[2] Have students read "Pillow Talk," pages 328 - 329 , and discuss other possible car safety inventions. Let students design and illustrate their own ideas.

WHO NEEDS THE SILLY THINGS?

Nancy and I made faces at each other which meant: Why do we put up with this old crab? We were still feeling cross with Dad because a whole day of our precious vacation had been wasted for safety belts to be installed in our car. The garage had been unable to get them in time.

"Sorry, gang," Dad had said, "we can't leave until day after tomorrow."

"Oh, Dad, I've told all the kids. . . ."

"But, Tom! There's no food in the house."

"Aw, gee, Dad who needs safety belts?"

"We do--and we're not leaving without them." Dad's stern voice stopped the clamor, and each of us sulked, in his own way.

The next day passed in gloomy and sullen impatience. Dad was so scorned by the family that he finally went down to the garage to spend the time. But the day was finally over, and the next morning we were finally on our way.

With Dad's constant reminders, fastening the safety belts became almost routine. As the trip got underway, we forgave him his fussiness and began to enjoy ourselves. Soon we were having the time of our lives. We laughed through 3 happy weeks, and then, suddenly, it was the last day and we were on our way home.

It was just after dawn when we left the motel and Dad called out, "Have you fastened your safety belts?"

Nancy nudged me, and we made our special faces at each other, giggling as we pulled the belts firmly around our hips. We hadn't even needed the silly things, I thought, but I felt limp and sleepy and it did seem sort of comfortable and secure around me. I closed my eyes and enjoyed the cool morning air on my face. The traffic was light, Dad was making good time along the narrow desert road, and soon the humming of the tires made me doze off.

In the middle of a happy dream, Nancy screamed. I opened my eyes to see a car coming straight for us on our side of the road! Nearer it came, its headlights like monster's eyes. Dad swerved onto the shoulder--too late! The crash . . . the sickening squeal of tires . . . dizzy skidding . . . turning, turning . . . Dad desperately holding the wheel. And then we hit a sandbank and stopped.

For a second, there was silence . . . and then Mother's anxious: "Are you all right?"

People came running and tried to get us out. The doors were jammed, holding Mother and Dad in. The back seat had been whipped out from under us; Nancy and I sat on the bare metal underneath, but the safety belts held us firm.

When the ambulance came, not one of us needed it, though our car went to the scrap heap.

The policemen who took us back to town said they had never seen an accident as bad as that without at least one death.

Our only injuries were minor cuts, and later we compared the black bruises around our stomachs made by the safety belts. They saved our lives, and never again would we have to be told, "Fasten your safety belts!"

PILLOW TALK

Auto safety belts, which have been required on new cars for the past 2 years, are ignored by 80 percent of the drivers on the road, says the National Highway Safety Bureau. Concerned auto-safety engineers believe the motorist must be protected without his having to think about it, and they are pushing development of what could be the best motorist protector yet--the "exploding" air cushion.

Cushions, or air bags as the auto industry calls them, are designed to pop out of the steering wheel and glove compartment in an accident to keep driver and front-seat passenger from crashing into the dashboard or windshield. The nylon balloons then quickly deflate, freeing the motorist to cope with the car if it should still be moving. The entire protective cycle occurs in 0.5 seconds, or the time it takes to sneeze. The safety pillows are set off by electric or mechanical sensors when a car is hit by an impact equal to that of slamming into a stone wall at 13 kilometers (8 miles) an hour.

Air bags for cars have been in the development stage since the mid-1950's. "The results so far are quite impressive," says Ray McHenry, research engineer at the Cornell Aeronautical Laboratory in Buffalo, a major auto-safety research center. Baboons, for instance, have survived high-speed stops that would have killed others not using cushions. The Federal safety bureau was impressed enough to propose that air bags become standard equipment on new cars by January 1, 1972. The Federal safety bureau opened hearings on the questions of making safety cushions mandatory and found the going partly smooth, partly rough.

Air bags, said their manufacturers, are ready for the production line. A major auto-part developer, Eaton, Yale & Towne, testified that most of the basic engineering bugs had been licked in its Auto-Ceptor system. On impact, the system's sensor (placed on the car's firewall) triggers a nitrogen bottle and fills within 0.03 seconds a bag carried in the instrument panel. The company has sunk more than $1.5 million in developing Auto-Ceptor and is gearing up a pilot plant that could produce 20,000 air bags a year. Other firms also are rushing work on air bags. Officials of

Olin Mathieson Chemical Corporation, announced at the hearing that it had perfected an inflation system more compact than Eaton's that uses a smokeless powder propellant to inflate the bag. Olin also is experimenting with bags placed behind and beside, rather than just in front of, the motorist. "We're ready to meet the demands of the auto industry. We can tailor it the way they want," said V. L. Saine, director of Olin's engineering development for the air bag.

General Motors, Chrysler, and other automakers have been working with Eaton and Olin engineers, but spokesmen said they doubted that air bags are ready for their cars. Some engineers wonder if air bags might introduce more driving hazards than they eliminate. They are concerned about ear damage from the shotgun-like bag explosion, possible injuries when the expanding bag punches the motorist, and the danger that they might be triggered accidentally. A further problem is the cost of the bags, possibly $100 or more per car and a boost in auto prices.

Safety bureau researcher Robert Carter counters that the potential hazards have been overemphasized. The bag deflates too fast to interfere with driving, he claims. In more than 3 million kilometers (2 million miles) of tests, he says, none has gone off inadvertently. No ear damage has been found, and bags have been safely fired even against children, Carter adds. The most severe injury caused by an air bag during government tests has been one bloody nose.

While the bags are expected to be tried out next year in the fleet models of some company cars, the betting in Detroit is that it will be several years before they will be produced in any volume.

One safety bureau official admitted to Newsweek's Norma Milligan that the mandatory requirement for air bags "appears to be further off" than expected. And certainly, safety engineers will keep pressing for them as the best safety device yet conceived. The physical impact of the air bag, Cornell's McHenry notes, has been likened to being struck hard with a folded magazine. "This may not be so pleasant," he says, "but it's preferable to a fractured skull."

SAFETY BELT - FACT OR MYTH?

Listed below are some facts and some myths about safety belt usage. Read both carefully. Explain why you think each statement is factual or mythical.

A. Using a safety belt, an auto passenger is more likely to be unhurt, alert, and capable of getting out of a car quickly.

B. A safety belt is likely to trap an auto passenger in a burning or submerged automobile.

ANSWER SHEET

SAFETY BELT - FACT OR MYTH?

The "A" is a "fact."

Without a belt, the motorist may be dazed or stunned by the crash; this would increase the time it takes to get out of the car. Therefore, the belt will speed up, rather than slow down the escape process.

The "B" is a "myth."

Fire and submersion actually occur in less than one-half of 1 percent (0.5%) of all serious accidents. (Including less-serious accidents--the "bumper-crumplers"--makes the proportion even smaller.)

SAFETY BELT - FACT OR MYTH?

Listed below are some facts and some myths about safety belt usage. Read both carefully. Explain why you think each statement is factual or mythical.

A. Many motorists have been "saved" by being thrown out of a car.

B. The probability of death is almost five times greater when the motorist is thrown from the automobile.

ANSWER SHEET

SAFETY BELT - FACT OR MYTH?

The "A" is a "myth."

The forces in an accident are so great that a person ejected from an automobile can be flung 12 to 15 meters (40 to 50 feet) or more from the car. (One body was found 45 meters (150 feet) away.) Whether this distance is covered through the air, along the ground, or both, it is highly likely to have serious results. In other cases, the car door is sprung, the motorist falls out, and the car rolls over and crushes the victim. Despite ideas about "being thrown clear," sheer common sense--based on extensive statistics--says it's safer to be inside the car.

The "B" is a "fact."

A station wagon carrying a family of six was struck from the rear. It ran off the road and rolled over. The mother was flung out of the door and was killed when her head hit a rock. The three children who were not flung from the car had broken bones, but lived. When the police arrived, the father, who had climbed from the car uninjured was frantically searching for the 18-month-old boy his wife had been holding in her lap. Half an hour later, they found the baby. Otherwise unharmed, he had drowned because he was hurled into 15 centimeters (6 inches) of water.

PASSENGER SAFETY - LEVEL C

CONCEPT III: PROPER USE OF SAFETY BELTS

OBJECTIVE

The student will be able to demonstrate and explain the proper use of safety belts.

CONTENT FOR DISCUSSION

Proper uses of safety belts are discussed below.

1. Safety belts should be used at all times. Driving at low speeds or short distances does not decrease the need for safety belts. About 90 percent of all accidents, 67 percent of injuries, and 54 percent of deaths occur at speeds below 48 kilometers per hour (30 mph). Short trips to a nearby store, etc., are just as dangerous as are long trips; in fact, three out of four fatal accidents occur within 40 kilometers (25 miles) of home. Safety belts have to be used to prevent injury.
2. Lap belts should fit snugly across the pelvic bones because the bone structure can withstand a great deal of force. Improper placement can cause internal injuries, and a loose safety belt is dangerous.
3. A shoulder harness should be worn with a lap belt, never without it. Unless a person is at least 140 centimeters (4 feet 7 inches) tall, one should not wear a shoulder harness because it will not cross the body at a safe place. In late model cars, the shoulder harness is permanently attached to the lap belt in the front seat. The NHWTSA (National Highway Traffic Safety Administration) recommends that children under 140 centimeters tall ride in the back seat and wear only the lap belt.
4. Children under 4 years of age or weighing less than 18 kilograms (40 pounds) should have safety restraint systems specially designed for them.

ACTIVITIES

1. Hands On.[1] Demonstrate the proper use of safety belts. If possible, obtain a demonstration seat from a local car dealer, or take the class out to a parked car.

2. Measure Up.[1] Have the students measure each other to determine who can wear a shoulder harness. Make a bar graph of the students' heights. Measure and mark 140 centimeters (4 ft 7 in.) beside a door or other convenient place for students to check their heights throughout the year. Use transparencies made from master for reproduction #8, to illustrate the correct position of the shoulder-lap belt combination (p. 339).

3. Safety Essay.[2] Have students read and discuss the essay, "Safety Belts" (pp.344 - 46). This essay gives examples of thetaken ideas some people have about wearing safety belts. Discuss the following questions. Do you agree with any of the reasons given for not wearing safety belts? If so, why? If not, why not? Have you heard people give these reasons before? Have you heard other reasons? Why do you think some people do not wear safety belts?

4. Fact or Myth.[1] Make copies of master for reproduction #9, Safety Belt-Fact or Myth (p.340), and give them to the students. Have them read the statements and write a paragraph indicating which statement is fact.

5. Kenny's Friends.[1] Have the class stage the play, "Kenny's Friends" (pp.347 - 49). This play is about a young boy, Kenny, who plans to go with his father to buy a model car. His family and friends want to go along, but a dilemma confronts them when they find that they are one safety belt short. Kenny solves the problem by deciding to stay behind so there will be enough safety belts for everyone. After the play has been presented, discuss the following questions. How many people want to ride in

the car? (seven) How many safety belts are in the car? (six) Are there enough safety belts for everyone? (no) Is it important that all passengers have individual belts? (Authorities say only one person per safety belt; never double up.) Is the problem of too many people per safety belt solved? If so, how?

6. Safety Belt Survey. Have the class conduct a safety belt survey of their class, other classes, people in the community, etc., and tally their findings. Master for reproduction #10 (p. 342) presents an example of such a questionnaire.

7. Research Committee.[2] Appoint a committee to investigate the history and development of safety belts. The report can include such facts as these:

   "Cars had safety belts before airplanes. In 1885, the early auto, or horseless carriages, had belts which prevented passengers from bouncing out of vehicles on rough, rutted roads. In 1901, a U.S. Army airplane was equipped with a leather strap. As early as 1935, G. J. Strickland, founder of the Automobile Safety League of America, recommended factory installation of safety belts in cars. About 15 years later, the Nash-Kelvinator Corporation introduced the first factory-installed safety belts in cars." Lap belts have been installed in the front seat of all cars since 1964 and in the back seat since 1966.

8. Infant Restraint Systems. Have students research and write for information on safety restraint systems for small children. Ask an auto supply dealer to come and demonstrate a seat specially made for children.

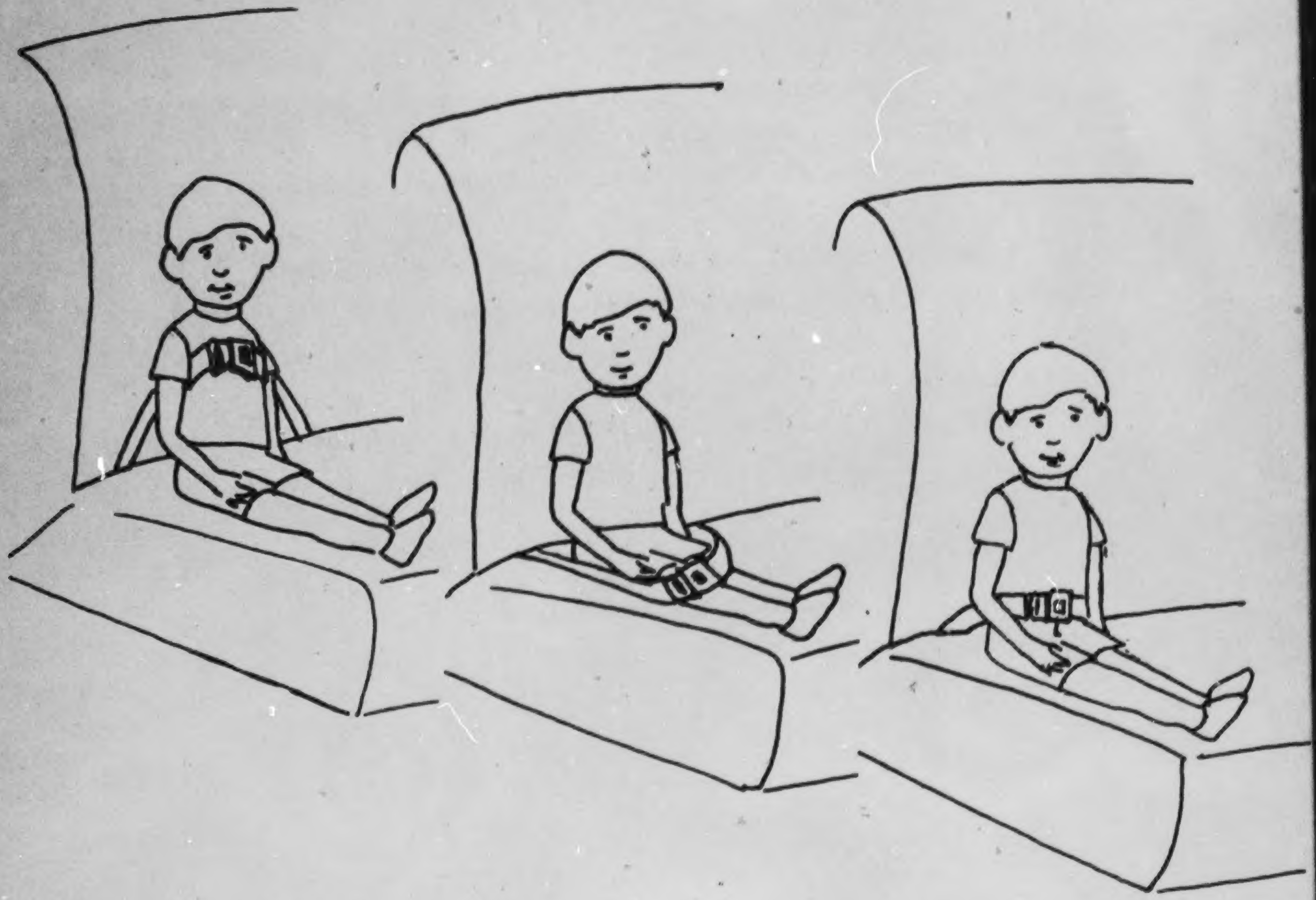
9. Belt Brochure. Have each student prepare a brochure for the family to encourage use of safety belts. Each brochure could contain an essay on "Why Use Safety Belts" and illustrations of the proper uses of safety belts and child-restraint systems.

10. Decisionmaking.[1] Distribute copies of master for reproduction #11, The Decision is Yours (p. 343). Have the students write a statement explaining the decisions that they would make in such a situation.

11. Student Crossword Puzzle. Have students create their own crossword puzzle using as many safety-belt-related clues and words as possible.

12. Research Topic. Have students research the different automobile safety devices and their functions. Items which can be included are collapsible steering systems, padded dashes, and safety glass.

Proper Placement of Safety Belt



SAFETY BELT - FACT OR MYTH?

Listed below are some facts and some myths about safety belt usage. Read both carefully. Explain why you think each statement is factual or mythical.

A. If I'm just going shopping, why bother? I don't need to wear a safety belt while driving around town at low speeds.

B. More than half of the accidents causing injury or death occur at speeds less than 65 kilometers per hour (40 mph). Three out of four accidents causing death occur within 40 kilometers (25 miles) of home.

ANSWER SHEET

SAFETY BELT - FACT OR MYTH?

The "A" is a "myth". In a study of 28,000 accident cases, fatalities of nonbelted occupants were spread over the whole speedscale, starting as low as 19 kilometers per hour (12 mph).

The "B" is a "fact". Speeds below 50 kilometers per hour (30 mph) accounted for 90 percent of the accidents, two-thirds of the injuries, and 54 percent of the deaths.

SAFETY BELT SURVEY

Please answer the following questions:

1. Do you have safety belts in your family car?

   yes____ no____

   Check those safety belts in your family car.

   lap belt____ shoulder harness____

2. Do you wear your lap belt?

   always____ sometimes____ never____

   Do you wear your shoulder harness with your lap belt?

   always____ sometimes____ never____

3. Do your parents use their safety belts?

   always____ sometimes____ never____

4. Why do you wear your safety belts?

THE DECISION IS YOURS

Safety belts and other safety devices are completely useless unless the driver and passengers make efforts to use them. It has been suggested that if a driver has an accident when he has clearly failed to use these safety devices, he should be considered guilty of contributory negligence and should not be entitled to any insurance settlement. How do you feel? What other ways can you think of to enforce the use of safety equipment?

SAFETY BELTS

The safety belt. What if you were assigned to write an essay on that subject? What would you say? You would probably have to think about it for a long time, wouldn't you? Maybe one of the questions you would ask yourself would be: How often do I wear a safety belt?

Well, how often do you? Probably not as often as you should, which is every time you get in the car. A lot of people do not put them on because somewhere they have gotten some wrong ideas about safety belts.

First there are the people who never wear safety belts. Every new car is equipped with belts, and they are there to be used. But maybe you know people like Joe Brown and his family. They thought of safety belts as sort of good luck charms. They did not have to wear the belts; just having them in the car was sure to ward off accidents. But it did not work that way. Joe spent quite a lot of time in the hospital because he was not wearing his safety belt when his Dad had to make a sudden stop one day.

Or maybe you have heard of someone like Judy Norris. The safety belt philosophy around her house goes something like this: when you travel on highways at high speeds, then you must wear a safety belt. But belts are too much bother to worry about when you are just driving around town at slow speeds. It is plain to see that Judy and her family do not know the real facts about accidents. They do not know that half of all the accidents in which people are injured happen when the cars are going at speeds of 80 kilometers per hour (50 mph) or less.

And have you ever met Stuart Gray? His older brother Jim knows a lot about cars; so when Jim talks about them, Stuart listens. Jim says that it is better to be thrown clear of a wreck than to be trapped by safety belts inside the car. Jim says he has friends who have been thrown clear and walked away from a crash without a scratch. That may be true in some cases, but if Stuart were to prick up his ears and listen to some real experts, he might be able to tell Jim a thing or two. He could tell Jim that statistics show the chance of surviving a crash is five times as great if you stay inside the car--where your safety belts will keep you.

You probably know people like the Gilroy twins, Kate and Sheila. They always look as if they just stepped out of a bandbox--they are so neat and clean. To make sure that they do not get their clothes wrinkled and crushed and twisted on their way to church or school, they do not wear their safety belts. Their mom says it is all right because there is not much chance of being in an accident when you are just driving in your own neighborhood. Mrs. Gilroy is taking a big chance. She does not realize that half of all traffic deaths occur within 40 kilometers (25 miles) of home. If she did, she would not mind if Kate and Sheila got a few wrinkles in their clothes.

Frank Myer's father is a lot like someone you know, too. Mr. Meyer has never had an accident. He prides himself on his good driving record and his knowledge of the safe action to take in every driving situation. "My family does not need safety belts," he says often. "I'm a careful driver." What Frank's father does not know is that four out of five drivers involved in a crash have never had an accident before, either. And most of them probably consider themselves good, careful drivers.

Bruce Fulsom may be a familiar character to you. He is a real go-getter, always on the move. He just cannot seem to sit still for a minute. He is pretty bright about most things. He knows the importance of wearing a safety belt. But he just does not like to be tied down to one spot. So he adjusts the safety belt to make it loose. Someone had better tell Bruce that the only way to get maximum protection from a safety belt is to pull it snug. The more snug it is, the less the danger of being thrown forward into the windshield or the front seat and the more chance of staying in the car during a crash.

You have heard of or actually known many people like Joe, Judy, Stuart, Jim, Kate and Sheila, Frank, Bruce and their families. They all have ony thing in common: they are not using their safety belts properly for reasons that just do not make sense when you compare their reasons with the facts. Here is the most telling fact of all: authorities estimate that more than 5,000 lives could be saved every year if everyone who rides in a car would automatically buckle up all the time.

KENNY'S FRIENDS

This playlet is about a young boy, his young friends, and his family. Plans to go with his father to buy a model car are disrupted when Kenny realizes that there are more passengers in his father's car than there are safety belts. Kenny emerges the hero when he decides that he will be the passenger to remain behind so that there will be enough safety belts to insure the safety of his friends and family.

The time is today and the place is any neighborhood street. The costuming is street clothes except for "Mother," who wears an apron, and "Father," who wears a coat and tie. Desks or chairs can be used to represent the seats in the car.

Cast of Characters

Kenny
Chris
Larry Kenny's friends
Billy

Julie, Kenny's little sister
Laurie, Julie's little friend
Mother
Father

(Kenny enters from one side of the stage and starts walking across the stage as if walking down the street. Chris, Larry, and Billy enter from the opposite side of stage.)

Larry: Hi, Kenny!

Kenny: Hi! Where ya' going?

Billy: Nowhere. Just walkin' around.

Kenny: Me too. Wish there was somethin' to do.

Chris: Maybe we should walk up to the ball field.

(Julie enters slowly.)

Kenny: OK, that's an idea. Oh rats, here comes that dumb sister of mine.

Larry: Ech! She's a pain.

Billy: Come on, let's start running.

Julie: Kenny, mummy says come home and get washed. Daddy's going for a ride.

Kenny: Where?

Julie: I dunno.

Chris: Can we all go?

Kenny: Sure, come on.

(All run up to where Kenny's mother and father are.)

Mother: Ken, daddy's going to the hardware store. He said he might get you one of those models you've been asking for.

Kenny: Oh great! Can my friends come?

Father: There's plenty of room in the car. OK guys, scramble in back. Julie and Ken up front.

Julie: Good, that's where I like to sit.

(Everybody moves into position as if in a car: three in front, three in back. Laurie comes running as father starts the motor. She sees Julie in the car.)

Julie: Hi, Laurie, wanna' come along?

Laurie: Sure, where ya' going?

Julie: Just down the street. Is it OK for Laurie to come? Please, Daddy, please-please.

Father: OK. Hop in. One more won't make any difference I guess.

Kenny: Wait a minute, Daddy, wait a minute. She can't come. Let's see--daddy, Julie, and me--that's three; Larry, and you two guys--that's three. That makes six, and that's all the safety belts we have. That's the rule. You said everybody has to wear a safety belt.

Father: Kenny, it's OK this time. We're only going around the corner.

Kenny: (very agitated) So what? Remember what that man on TV said. It's the rule.

Julie: (seeing that Laurie is beginning to cry) Oh, Daddy, Kenny's mean. I want Laurie to come. All his stupid friends are coming.

Kenny: No, she can't. Don't be such a creep, Julie. You know the rule.

(Julie and Laurie begin to cry together.)

Kenny: Oh, quit crying! I know. I got an idea. (Kenny gets out of car.) Get in, Laurie, where I was sitting and for Pete's sake stop bawling. Now everybody buckle up. Come on, Daddy--you first.

(Everybody pretends they are fastening their safety belts.)

Father: OK. Now we're all strapped in Ken. Now what?

Kenny: I'm not going, that's what. I'll just hang around here and wait for you guys to come back. I don't mind not going. But say, Dad, how about bringing me back two of those car models since I let Laurie use my safety belt?

Father: Ken, I think you're pretty sneaky. You figured out a way to get two model cars instead of one. But I think you're real smart, too. You really are concerned about everybody's safety. And on top of that, you're a good brother and a good friend. For that, you'll get your cars.

Kenny: You're cool, Dad. Have a safe trip.

Father: We will--because of you son.

FROM: Teaching Children
About Safety Belts
U. S. Department of
Transportation
National Highway Traffic
Safety Administration
Washington, D.C. 20590

PASSENGER SAFETY - LEVEL C

CONCEPT IV: RIDING IN THE CAR

OBJECTIVE

The student will be able to identify the things to do as a passenger to promote safe travel in a car.

CONTENT FOR DISCUSSION

The passenger can do many things to protect himself and others. For safety, a passenger should:

1. Close the door securely.
2. Lock the door; a sudden stop, swerve or collision can cause the door to fly open.
3. Fasten safety belts and check to see if other passengers have theirs fastened.
4. Keep head, arms, fingers, and other parts of body inside the car.
5. Do not play with doorknobs and door handles; the door might accidentally fly open and cause one to be thrown from the car.
6. Remain seated; do not allow climbing over or standing up in the seats.
7. Talk softly; loud noises, laughter, screaming, rough-housing, and even talking to the driver can cause an accident.
8. Keep hands and feet away from the steering wheel and other driving devices.
9. Put books and packages on the rear floor; a sudden stop will cause them to fly around inside the car.
10. Never hold or play with sharp objects while riding in the car, and never eat lollipops or popsicles, as a sudden stop can cause injury.

11. Help the driver look out for exit signs or other necessary information, and watch traffic.
12. Help the driver make sure that all passengers are following safety rules.

ACTIVITIES

1. Introductory Questions. Discuss the following questions:
    a. If you have brothers and/or sisters, how do you behave in the car when you are on a trip?
    b. Does your father or mother object to your shouting or arguing while he or she is driving?
    c. If either does, is either being unreasonable?
    d. Can passengers cause accidents? How? (Distracting the driver, etc.)
    e. Can a passenger help a driver drive more safely? How? (Making sure the driver is not distracted by himself or any other passenger, watching for road signs, and traffic hazards, etc.)
2. Newspaper Research.[2] Have the students collect newspaper clippings of automobile accidents. Discuss the causes of each accident and the possible role of a passenger in the accident. The teacher could stimulate discussion by a statement such as "No accident occurs as a result of a single cause."
3. Safety Priorities.[2] Have students rank the severity or frequency of the following improper passenger behavior.
    a. Standing on the edge of the back seat behind the driver.
    b. Kneeling on the back seat with one's head out the window.
    c. Holding onto the door handle instead of the armrest.
    d. Climbing back and forth over the front seat.
    e. Lying on the deck next to the back glass.
    f. Not locking the door.

   g. Not wearing safety belts.
   h. Arguing and fighting in the back seat.
   i. Riding in the driver's lap.
   j. Asking the driver frequent and annoying questions.
   k. Eating lollipops while riding.

4. Safety Essays.[2] Have students write an essay on either of the following two themes: the benefits of proper passenger behavior or the hazards of improper passenger behavior.

5. Creative Cartoons. Have students draw cartoons of foolish things done by car passengers. Give the characters descriptive names like Giggly Gertie, Jumpy Joe, etc.

6. Inertia Experiments. Have the students demonstrate what happens to books and other objects placed on the rear window deck when the car must stop suddenly. Have them place a stack of books on a desk or chair, pull the chair forward, and then stop quickly. Draw from the students the fact that the books would be moving at a tremendously faster speed in a car and could cause serious injury.

7. Responsibility for Others. Have the students discuss or write an essay about their responsibilities in keeping younger children safe in cars. Have the class or group develop games for small children to play in a car. Directions for the games and/or constructed games could be given to the lower grades.

8. Student Rules. Have the students make a safety chart of class-determined rules for safety and courtesy as a passenger.

9. Creative Writing.
   a. Have the students write a story about "Ima Gabby Rider," the girl who talks to the driver and expects him to "look there." Have students dramatize some of the stories.

b. Have the students write a script for a driver and his family or friends. Have the driver explain the rules which should be followed when riding in the car or have the rules brought out in situations that occur as they drive along.

10. Passenger Quiz.[8] Use master for reproduction #12, Passenger Quiz, (p. 355). Have students fill in the blank with the correct word or words.

11. Reading a Signal Light.[4,1] Use master for reproduction #13, How Do You Read A Signal Light (p. 357). Have the students fill in the missing letters.

PASSENGER QUIZ

1. Your mother picks you up after the ball game. You are excited because you won, but you should be very careful not to make ____________________ or to block her ________________ while she is driving.

2. You _ ____________________ use safety belts everytime you
   should/should not
   ride in a car.

3. When using safety belts, you are ________________ likely to be
   more/less
   seriously hurt.

4. You ____________________ lock your door after getting in.
   should/should not

5. You ____________________ block the driver's vision.
   should/should not

6. If you were playing around in the back seat, you ____________________
   would/would not
   be likely to block the driver's vision.

ANSWER SHEET

PASSENGER QUIZ

1. Your mother is going to pick you up after your ball game. You are excited because you won the game but you should be very careful not to make *(noise)* or to block her *(view)* while she is driving.

2. You *(should)* use safety belts everytime you ride in a car.
   should/should not

3. When using safety belts it is *(less)* likely that you could be
   more/less.
   hurt seriously in an accident.

4. You *(should)* lock your door after getting in.
   should/should not

5. You *(should not)* block the driver's vision.
   should/should not

6. If you were in the back seat and playing around, you *(would)*
   would/would not
   be likely to block the driver's vision.

HOW DO YOU READ A SIGNAL LIGHT?

Fill in the missing letters and then rewrite the message on the lines at the bottom of this paper.

The s-gn-l l-ght facing yo- in the dH-ect-on you -ant to go is -he o-e to b- o-eyed.

The sign-l ligh- gi-es bo-h the p-destr-an and -ehicles the r-ght to m--e.

E-ergé-cy ve-icles and --neral pr-ces-ions are le-ally a--owed to d--regard all -ign-l l-gh-s or s-o- s-gns.

A-y time --ere is a p-l-ceman d-r-ct--- tra--ic, o-ey h-m and not -h- si--al l-g-t or -alk ligh-.

1. ____

____

2. ____

____

3. ____

____

4. ____

____

ANSWER SHEET

HOW DO YOU READ A SIGNAL LIGHT?

1. *(The signal light facing you in the direction you want to go is the one to be obeyed.)*

2. *(The signal light gives both the pedestrians and vehicles the right to move.)*

3. *(Emergency vehicles and funeral processions are legally allowed to disregard signal lights or stop signs.)*

4. *(Any time there is a policeman directing traffic, obey him and not the signal light or walk light.)*

PASSENGER SAFETY - LEVEL C

CONCEPT V: TRIP PLANNING

OBJECTIVE

The student will be able to identify the preparations which one should make for a safe trip and will be able to identify things to do to aid the driver.

CONTENT FOR DISCUSSION

Students in this age group can play an important part in the planning of family trips. They can plan the best route to take. They can estimate how far the family should travel each day and how much gas will be needed.

1. Planning the route
    a. Use up-to-date maps. Maps can be obtained from auto clubs, service stations, insurance and oil companies, chambers of commerce, and highway departments. For North Carolina maps, write to:

       Department of Transportation
       Highway Building
       Wilmington Street
       Raleigh, N.C. 27611

    b. Be able to interpret the map. 1973-74 North Carolina map contains an index of cities, towns, and rest areas along with a chart of distances between 55 towns and cities. The map has special symbols for the road classifications, services, and populations of cities and towns. A scale of 2.5 centimeters (1 inch) equaling approximately 20 kilometers (13 miles) is used.

c. Allow enough time to travel to the destination without hurrying. Allow time for rest stops, eating, refueling, and the unexpected--ranging from bad weather to an irresistible tourist attraction along the way.

d. Plan to travel no more than 480 kilometers (300 miles) to 800 km (500 miles) a day. Driving for extremely long distances without breaks for sleep causes fatigue and road hypnosis.

e. Avoid congested routes through cities. If cities and other bottlenecks are unavoidable, plan to avoid rush

h hour traffic.

2. Preparing the Car

   a. Have the car checked ahead of time to make sure that it is in top running condition.

   b. Pack emergency equipment. The following items should be included: jack, lug wrench, wheel blocks, flashlight, first aid kit, flares, tool kit, jumper cables, fire extinguisher, towel or rags, pencil and notebook, and window scraper.

   c. Pack the car so that the driver's vision is not blocked and so that nothing will fly around during a sudden stop.

3. Just before leaving

   a. Recheck the inflation of tires.

   b. Make sure that the windows are clean and the driver's vision is not blocked.

   c. Lock all doors securely.

   d. Fasten safety belts and be sure everyone has his fastened.

During the trips the student can read the map for the driver and keep him informed both of the route to take and of the present location. Make sure that all other passengers are following safety rules. Involving the children (of ages in the middle years) in map-reading activities helps them feel responsibility, promotes their interests in the trip, and gives the driver a valuable service.

ACTIVITIES

1. Map Reading

   a. Locate the following cities using the map index and then circle them with a pencil:

      Greensboro
      Wilmington
      Raleigh
      Fayetteville
      Winston-Salem
      Charlotte
      Durham
      Asheville
      Gastonia

   b. Locate the following places using the map index.

      Bughill
      Deep Run
      Eureka
      Frogsboro
      Hiwassee
      Milton
      Bear Poplar
      Frying Pan Landing
      Chocowinity

   c. Use a ruler and the distance scale [1] to measure:

      (1) The longest distance across the State from east to west. How many kilometers (miles) long is the State?

      (2) The farthest points north and south. How many kilometers (miles) wide is the State?

   d. Use the distance scale to determine the kilometers (miles) from:

      Raleigh to Wilmington
      Asheville to Winston-Salem
      Elizabeth City to Roanoke Rapids
      Charlotte to Fayetteville
      New Bern to Goldsboro

   e. Locate the legend on the map, and name at least five things indicated by the legend.[1]

   f. Locate the symbol for multilane highways, multilane divided highways, and those with access fully controlled. Name at least two. What are the differences between them?

   g. Describe the differences in route markers for an interstate and U.S. highway.[1]

2. Travel Distance and Time.[1] Have students determine the information needed in each blank on the master for reproduction #14, Travel Distance and Time (p. 364-365).

3. Gasoline Usage and Travel Time.[1] Have students fill in the missing blanks with the correct answer on master for reproduction #15, (p. 367-368).

4. Planning a Vacation.[1] Have students pick a place or places in North Carolina that they would like to visit on a vacation. Have them:

   a. Select a preferred as well as an alternate route of travel in the event of closed roads or highway construction areas.
   b. Chart the routes on a map and list the highway numbers in the order that they will be followed.
   c. Compute the total number of kilometers (miles) that will be traveled.
   d. Give fuel requirements in liters (gallons) using the average of 24 kilometers per liter (15 mpg) for a round trip.
   e. Find the total cost of gasoline if the average price is 56¢ per liter (one gallon).
   f. If the car is filled with gasoline at the time of departure and it has a 24-liter (25-gallon) capacity tank, how many stops for gasoline will be required?
   g. Plan a 10-minute rest stop every 2 hours and a 45-minute stop for lunch. Approximately where will you eat lunch?
   h. If you wish to arrive at your destination no later than 6:30 p.m., what will be your travel plan--for example, what time would you leave and, if necessary, where would you spend the night before arrival?

5. Bulletin Board. Have students make a bulletin board illustrating emergency equipment which should be packed for a trip. Have drawings or pictures illustrating the purpose of each.

6. First Aid. Have students make a first aid kit for a car. Include:

   tape
   bandaids
   gauze
   ointment
   scissors
   antiseptic
   first aid booklet
   eye patches
   cotton balls

7. Game Time. Have students make a booklet of car games to play on a long trip.

TRAVEL DISTANCE AND TIME - METRIC

1. In an auto trip, the Taylor family traveled 400 kilometers in 5 hours. The Taylors averaged __________ kilometers per hour.
2. A car travels 145 kilometers in 2 hours. At this rate it would travel __________ kilometers in 6 hours.
3. Carol's family left on a 521-kilometer trip. On the first day, they completed two-thirds of the trip. How many kilometers did they travel on the first day? __________ They drove for 4 hours. They averaged __________ kilometers per hour.
4. Jean's father plans a trip of 2,136 kilometers. He plans to travel 4 days. If he travels the same distance each day, how far must he travel each day? __________ kilometers
5. Mr. Haynes is taking a 724-kilometer trip. During the first 3 hours, his average rate of travel was 68 kilometers per hour. After 3 hours, how much farther does Mr. Haynes have to travel?
   ____
6. The Smiths went to visit relatives that lived 2,414 kilometers away. They drove 782 kilometers in 8 hours the first day. The second day they drove 832 kilometers in 10 hours. How far did they have to drive on the third day? __________ kilometers
   If they arrived at their relatives home at 6 p.m. and averaged 80 kilometers an hour, what time would they have to leave the motel in the morning? __________ a.m.
7. A bus traveled 469 kilometers in 7 hours. The average rate of speed was __________ kilometers per hour.
8. At an average rate of speed of 105 kilometers per hour, how long will it take a train to travel 1,680 kilometers?
   __________ hours

TRAVEL DISTANCE AND TIME - ENGLISH

1. In an auto trip, the Taylor family traveled 250 miles in 5 hours. The Taylors averaged _________ miles per hour.
2. A car travels 90 miles in 2 hours. At this rate, it would travel _________ miles in 6 hours.
3. Carol's family left on a 324-mile trip. On the first day, the completed two-thirds of the trip. How many miles did they travel on the first day? _________ They drove for 4 hours. They averaged _________ miles per hour.
4. Jean's father plans a trip of 1,328 miles. He plans to travel 4 days. If he travels the same distance each day, how far must he travel each day? _________ miles
5. Mr. Haynes is taking a 450-mile trip. During the first 3 hours, his average rate of travel was 42 miles per hour. After 3 hours, how much further does Mr. Haynes have to travel? _________ miles
6. The Smiths went to visit relatives that lived 1,500 miles away. They drove 480 miles in 8 hours the first day. The second day they drove 517 miles in 10 hours. How far did they have to drive on the third day? _________ miles
   If they arrived at their relatives home at 6 p.m. and averaged 50 miles an hours, what time would they have to leave the motel in the morning? _________ a.m.
7. A bus traveled 294 miles in 7 hours. The average rate of speed was _________ miles per hour.
8. At an average rate of speed of 65 miles per hour, how long will it take a train to travel 1,040 miles? _________ hours

ANSWER SHEET

TRAVEL DISTANCE AND TIME

	Metric		English
1.	80 km/h	1.	50 mph
2.	435 kilometers	2.	270 miles
3.	347 kilometers; 87 km/h	3.	216 miles, 54 mph
4.	534 kilometers	4.	332 miles
5.	520 kilometers	5.	324 miles
6.	800 kilometers, about 8 a.m.	6.	503 miles; 8 a.m.
7.	67 km/h	7.	42 mph
8.	16 hours	8.	16 hours

COMPUTING GASOLINE USAGE AND TRAVEL TIME - METRIC

1. In 1,064 kilometers of driving, Mr. Mills used 133 liters of gasoline. What was the average number of kilometers per liter? __________
2. Mr. Mills' gasoline tank holds 95 liters of gasoline. How many times would he have had to buy gas? __________
3. On the first day of a 1,931-kilometer trip, Jean's family drove 869 kilometers. What percent of the trip had they completed? __________
4. Art drove 198 kilometers in 2-1/4 hours. His average rate was __________ kilometers per hour.
5. A man drives 156 kilometers in 3 hours. If he drives the same rate, how long will it take him to drive a distance of 260 kilometers? __________
6. Driving at an average of 64 kilometers an hour, Mr. Jones can travel 576 kilometers in __________ hours.
7. The Ryans went on a cross-country trip last summer. If they traveled 14,030 kilometers in 23 days, how many kilometers did they average in a day? __________
8. If Mr. Ryan's car used 2,100 liters of gasoline on the trip, the car averaged __________ kilometers per liter of gasoline.
9. If Mr. Ryan paid $0.16 per liter for the gasoline he used on the trip, how much did Mr. Ryan spend on gasoline? __________
10. Averaging 80 kilometers per hour, how long will it take Jim's father to drive 901 kilometers to Indianapolis, Indiana? __________

COMPUTING GASOLINE USAGE AND TRAVEL TIME - ENGLISH

1. In 665 miles of driving, Mr. Mills used 35 gallons of gasoline. What was the average number of miles per gallon?

   ____

2. Mr. Mills' gasoline tank holds 25 gallons of gasoline. How many times would he have had to buy gas? __________
3. On the first day of a 1,200-mile trip, Jean's family drove 540 miles. What percent of the trip had they completed?

   ____

4. Art drove 120 miles in 2-1/4 hours. His average rate was __________ miles an hour.
5. A man drives 96 miles in 3 hours. If he drives the same rate, how long will it take him to drive a distance of 160 miles?

   ____

6. Driving at an average of 40 miles an hour, Mr. Jones can travel 360 miles in __________ hours.
7. The Ryans went on a cross-country trip last summer. If they traveled 8,713 miles in 23 days, how many miles did they average in a day? __________
8. If Mr. Ryan's car used 555 gallons of gasoline on the trip, the car averaged __________ miles per gallon of gasoline.
9. If Mr. Ryan paid $0.64 per gallon for the gasoline he used on the trip, how much did Mr. Ryan spend on gasoline? __________
10. Averaging 50 miles per hour, how long will it take Jim's father to drive 560 miles to Indianapolis, Indiana? __________

ANSWER SHEET

GASOLINE USAGE AND TRAVEL TIME

	Metric		English
1.	8 km/g	1.	19.5 miles
2.	Twice	2.	Twice (once starting, once during)
3.	45 percent	3.	45 percent
4.	88 km/h	4.	53-1/3 mph
5.	5 hours	5.	5 hours
6.	9 hours	6.	9 hours
7.	610 kilometers	7.	378.8 miles
8.	16 kilometers per liter	8.	15.7 miles per gallon
9.	$336.00	9.	$355.20
10.	11.2 hours	10.	11.2 hours

RESOURCE LIST

ORGANIZATIONS

Aetna Casualty and Surety Company, Driver Education Services, 151 Farmington Avenue, Hartford, Connecticut 06115.

Allstate Insurance Company, 7770 Frontage Road, Skokie, Illinois 60076.

American Automobile Association, 1712 G Street NW., Washington, D. C. 20006.

American Automobile Association-North Carolina, Carolina Motor Club, Inc., 701-3 South Tryon St., P.O. Box 60, Charlotte, North Carolina 28202.

Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005.

National Bicycle Dealers Association, 29025 Euclid Avenue, Wickliffe, Ohio 44092.

National Education Association, American Association for Health, Physical Education and Recreation, 1201 16th Street NW., Washington, D. C. 20036.

National 4-H Service Committee, Inc., Program Services, 150 North Wacker Drive, Chicago, Illinois 60606.

National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

North Carolina Department of Motor Vehicles, Traffic Safety Education Division, 1100 New Bern Avenue, Raleigh, North Carolina 27611.

North Carolina Department of Public Instruction, Education Building, Raleigh, North Carolina 27611.

North Carolina Department of Transportation, Bicycle Coordinator, P.O. Box 25201, Raleigh, North Carolina 27611 (for bikeways information).

North Carolina State University, Agricultural Extension Service, Department of Agricultural Information, Box 5037, Raleigh North Carolina 27607.

Schwinn Bicycle Company, 1856 Kastner Avenue, Chicago, Illinois 60635.

University of North Carolina at Chapel Hill, Highway Safety Research Center, Craige Trailer Park, Chapel Hill, North Carolina 27514.

The Wheelmen, 6239 Anauista, Flint, Michigan 48507.

RESOURCE LIST - PASSENGER SAFETY

FILMS

How and Why to Use Safety Belts. (1971, 16 mm, color, 8 min.) A definitive in-depth approach, dramatizing the need for safety belts, and explaining why safety belts save lives. Footage covers standard seat belts, lap-shoulder belts, full-harness belts, and includes the best current protection for the traveling child. Buckle assemblies and buckle adjustments for foreign as well as domestic model cars are explained in detail, with instructions for use and maintenance of these as well. Available from American Safety Belt Council, Inc., Public Education Office, P.O. Box 539, Los Angeles, California 90028.

Safety Belts for Children. (1968, 16 mm, color, 11 min.) Film shows installation and use of car beds, child seats, child harnesses, and other devices. Available from American Safety Belt Council 271 North Avenue, New Rochelle, N.Y. 10801.

She Purrs Like a Kitten. (16 mm, color, 5 min.) A pair of elderly ladies in a chauffeur-driven car are busily chatting. The narrator says sarcastically that they have too many fascinating things to talk about to fasten their safety belts. The car stops suddenly and they both are shown getting up and back into their seats in a "comic" manner. In a second shot of the ladies later in the film, the narrator says that safety belts are important to car maintenance because you can avoid "body repairs." Again at the end of the film, he reminds viewers to keep their safety belts fastened. Available from Data Films, 2625 Temple Street, Hollywood, California 90828.

U. F. O. (Unrestrained Flying Objects). (1968, 16 mm, color, 15 min.) A dummy who participates in crash tests investigating safety belt use narrates this informative and interesting film. General Motors Corporation, G. M. Film Library, 3044 West Grand Boulevard, Detroit Michigan 48202.

FILMSTRIPS

Safe and Sound Along the Way. (color, primary) Introduces traffic safety practices for pedestrians, vehicle passengers, bicycle riders. Society for Visual Education, Inc., 1345 Diversey Parkway, Chicago, Illinois 60614.

Safe Riding. (primary. color with cassette teach-a-tape) Help teach the primary pupil the way to develop safety habits in the family car. Available from Eye Gate House, Inc., 146-01 Archer Avenue, Jamaica, New York 11435.

Safety. (1969, belongs to a series, primary to intermediate) Available from Behavioral Research Lab, Box 557, Palo Alto, California 94302.

The Highway Patrol. (primary) Sigma Educational Films, P.O. Box 1235, North Hollywood, California 91601.

Your Adventures in Traffic Safety, Part 4. Professional Arts, Inc., 1752 Parrott Drive, San Mateo, California 94402.

BOOKLETS, LEAFLETS, AND MAGAZINES

Automobile Safety Belt Activities Book-Grades 4 thru 7. National Highway Traffic Safety Administration, U.S. Department of Transportation, 400 Seventh Street SW., Washington, D.C. 20591, 1972.

Automobile Safety Belt Fact Book. National Highway Traffic Safety Administration, U.S. Department of Transportation, 400 Seventh Street SW., Washington, D.C. 20591, 1972.

Catalog-Poster Directory. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

The Hazard Family. General Motors, G. M. Film Library, 3044 West Grand Boulevard, Detroit Michigan 48202.

Parents Can be Serious Traffic Hazards. Ten rules for parents who must drive their children to or from school. American Automobile Association, Carolina Motor Club, 701-3 South Tryon Street, P.O. Box 60, Charlotte, North Carolina 28202.

Seat Belts. Instructor, December 1972, pp. 62, 63.

Teaching Children About Safety Belts. National Highway Traffic Safety Administration, U.S. Department of Transportation, 400 Seventh Street SW., Washington, D.C. 20591, 1972.

Farm Vehicle Safety

Level C

FARM VEHICLE SAFETY UNIT - LEVEL C

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FARM VEHICLE SAFETY - LEVEL C

(Optional Unit)

INTRODUCTION

Many North Carolina youngsters operate tractors or other vehicles on their families' farms. They should know the hazards involved with tractors whether they are actually driving a tractor or simply are in the area where farm machinery is being operated. Of all tractor deaths, 11 percent resulted from being an "extra" rider on a tractor or on farm equipment pulled by the tractor. Approximately 18.5 percent (the largest percentage of all groups) of all tractor deaths occurred in the age group of 10 to 19 years.

This unit describes some of the hazards involved in operating farm machinery and maps out a safety routine that the student can use as part of his work plan. It is designed for optional use by the teacher in rural North Carolina in order to fill the needs of rural students.

UNIT OBJECTIVES

1. The student will develop safe and responsible habits while operating farm vehicles.
2. The student will identify certain hazards involved in farm vehicle operation and will know how to avoid such hazards.

FARM VEHICLE SAFETY - LEVEL C

UNIT CHECKLIST FOR TEACHERS

1. Do your students check the field for possible hazards before he begins?
2. Do they make a maintenance and safety check of the machine every time they begin?
3. Do they mount and dismount the tractor properly?
4. Do they start and stop the tractor safely? Do they operate the tractor at a safe speed?
5. Do they wear sturdy shoes and clothes that fit?
6. Do they shut off the motor when investigating breakdowns?
7. Do they let the engine cool before refueling or adding water to the radiator?
8. Do they carry a fire extinguisher with the tractor at all times?

CHECK YOUR FARM VEHICLE SAFETY KNOW-HOW

1. Do you check the field for possible hazards before you begin?
2. Do you make a maintenance and safety check of the machine every time you begin?
3. Do you mount and dismount the tractor properly?
4. Do you start and stop the tractor safely? Do you operate the tractor at a safe speed?
5. Do you wear sturdy shoes and clothes that fit?
6. Do you shut off the motor when investigating breakdowns?.
7. Do you let the engine cool before refueling or adding water to the radiator?
8. Do you carry a fire extinguisher with the tractor at all times?

FARM VEHICLE SAFETY - LEVEL C

CONCEPT: HAZARDS AND PRECAUTIONS

OBJECTIVE

The student will be able to predict hazards involved with driving a tractor and to identify precautions that should be taken.

CONTENT FOR DISCUSSION

The young tractor driver especially needs to know the hazards of tractor driving. Some of the hazards are:

1. Tractors are driven on all kinds of surfaces, and dangers are often sudden and unexpected.
2. There are many moving parts which are exposed and in which a person can be caught.
3. Tractors can turn over quickly, in less than half a second. The driver cannot get off the tractor in time to avoid getting hurt or killed.
4. Tractors can easily turn over if the front end is higher than the rear or if a load is hitched too high on the tractor, because most of the tractor's weight is concentrated on the rear wheels.
5. Tractors can catch on fire if they are refueled while they are running or while the engine is hot. The fuel vapor can collect around the tractor engine and ignite from contact with a hot manifold or spark.
6. The driver is the biggest hazard. Accidents occur when the driver commits an unsafe act or when an unsafe condition is allowed to exist.
7. There should be only one person on a tractor: the operator. There is no place on the tractor where an "extra" rider can travel safely. A sudden turn or jolt can cause the rider to lose balance and to fall.

These hazards can be avoided or minimized by--

1. Predicting possible hazards and eliminating or minimizing hazards.

Remove big rocks or logs from the field and remove dangling chains from the drawbar which could get caught on a rock or stump and cause the tractor to turn over.

2. Making daily maintenance and safety checks before starting the engine. The driver should follow the daily maintenance check suggested in the tractor manual. The safety check should include the following:
   - (a) The fuel supply and the water level in batteries
   - (b) Tires for cuts and correct inflation
   - (c) Fan belt
   - (d) Brake
   - (e) Clutch
   - (f) Seat adjustment
   - (g) Steering
   - (h) Wheels (tight nuts and bolts)
   - (i) Hitch
   - (j) Power takeoff shield placement (clothes can get caught in it)
3. Always opening the shed door before starting the tractor. Exhaust fumes in a closed area can cause carbon monoxide poisoning.
4. Using caution when mounting or dismounting. The driver should not jump on or off of a tractor. He should use the steps and handholds that are provided Keeping the tractor clean can eliminate greasy spots, dirt, or other debris which the driver could slip on.
5. Starting the tractor safely and looking out for the safety of others.
   - (a) The seat should be adjusted so that the driver can reach and operate all of the controls.
   - (b) The gearshift should be in neutral or park.
   - (c) The power takeoff shaft should be in neutral.
   - (d) The driver should then put his foot on the clutch, turn on the switch, and start the tractor.
6. Operating the tractor at a safe speed. Tractors can turn over at 13 kilometers per hour (8 mph) if the wheels hit an object or drop into a hole, and at an even lower speed when turning.

7. Reducing speed before making a turn or applying the brakes. After the engine has been slowed down, the inside brake can be applied to help make the turn.
8. Wearing clothes that fit. Many accidents occur as a result of loose clothing (gloves, sleeves, pant legs) being caught in the moving parts of the tractor and other farm machinery. The driver should wear sturdy shoes to protect his feet and to help him grip the clutch and the brakes.
9. Not driving when tired. Fatigue is a major cause of accidents because the driver is less careful when tired.
10. Hitching loads only to the drawbar in low position.
11. Stopping the tractor safely. The driver should:
    a. Reduce the engine speed with the throttle and let the engine idle for a few minutes to cool down.
    b. Shut off the engine.
    c. Put the gearshift lever in park or low gear when the engine has completely stopped, and set the brakes to prevent the tractor from rolling.
12. Always shutting off the motor before getting off the tractor when there is trouble with the tractor or equipment. One should never use a stick to unclog a machine unless the engine is shut off and the parts have stopped moving.
13. Shutting off the engine and letting it cool before refueling the tractor, because the heat and the gasoline vapors can easily catch the tractor on fire. Small amounts of gasoline should be stored only in safety cans with a spring-closed cover to prevent the vapors from escaping.
14. Having a fire extinguisher both on the tractor and where the tractor is stored.
15. Letting the tractor cool before removing the radiator cap and removing the cap slowly. A cloth placed over the cap can help prevent being burned by steam.[14]

No one under 16 can be hired to operate a tractor on the roadway or in the field.

ACTIVITIES

1. Reaction Demonstration.[14] Have two students hold onto the ends of a broom. Instruct one student to pull the broom until he feels a jerk and then to let go of the broom. After a few seconds, the other student should give a quick jerk. The student pulling on the broom probably tightened his hold and could not let go. This demonstrates that the danger involved in trying to unclog a running machine is that a person cannot let go quickly enough to avoid being caught.
2. Tractor Tipping. Using a plastic toy tractor, cut out the underside and fasten a dowel rod to the axle. A large rubber band is wound around the dowel end underneath the front end of the tractor. To direct the tractor forward, wind the rear wheels backward. Hold the rear wheels between both hands. The front of the tractor will rise up. Wind the wheels forward so that the tractor goes backward. The front end of the tractor tries to go down. This demonstrates that, when the back wheels are stuck, moving forward can make the tractor tip and that one should back up or be pulled out by another tractor to get out safely.

   Hitching.[4] Lock the rear wheels of the toy tractor with a pencil, etc. Tie a piece of string to the rear axle of the tractor and pull. This will cause the tractor to tip up. Fasten the string to the drawbar and pull. The tractor will not tip over backward.
3. County Agriculture. Invite the agricultural extension agent to speak to the class about tractor safety.
4. Bulletin Board. Have students collect pictures of different types of tractors to make a collage bulletin board.
5. Safety Checklist.[14] Have students who drive tractors devise their own safety checklist beginning with the seat and moving clockwise around the tractor.
6. Dress Up. Have students draw pictures of drivers properly and improperly dressed for operating a tractor.
7. Student Rules. Have students make up their own safety rules for driving a tractor safely. Have student illustrate each rule by posters, skits, or stories.

RESOURCE LIST

ORGANIZATIONS

Aetna Casualty and Surety Company, Driver Education Services, 151 Farmington Avenue, Hartford, Connecticut 06115.

Allstate Insurance Company, 7770 Frontage Road, Skokie, Illinois 60076.

American Automobile Association, 1712 G Street NW., Washington, D. C. 20006.

American Automobile Association-North Carolina, Carolina Motor Club, Inc., 701-3 South Tryon St., P.O. Box 60, Charlotte, North Carolina 28202.

Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005.

National Bicycle Dealers Association, 29025 Euclid Avenue, Wickliffe, Ohio 44092.

National Education Association, American Association for Health, Physical Education and Recreation, 1201 16th Street NW., Washington, D. C. 20036.

National 4-H Service Committee, Inc., Program Services, 150 North Wacker Drive, Chicago, Illinois 60606.

National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

North Carolina Department of Motor Vehicles, Traffic Safety Education Division, 1100 New Bern Avenue, Raleigh, North Carolina 27611.

North Carolina Department of Public Instruction, Education Building, Raleigh, North Carolina 27611.

North Carolina Department of Transportation, Bicycle Coordinator, P.O. Box 25201, Raleigh, North Carolina 27611 (for bikeways information).

North Carolina State University, Agricultural Extension Service, Department of Agricultural Information, Box 5037, Raleigh North Carolina 27607.

Schwinn Bicycle Company, 1856 Kastner Avenue, Chicago, Illinois 60635.

University of North Carolina at Chapel Hill, Highway Safety Research Center, Craige Trailer Park, Chapel Hill, North Carolina 27514.

The Wheelmen, 6239 Anauista, Flint, Michigan 48507.

RESOURCE LIST - FARM VEHICLE SAFETY

FILMS

Safe Operation of the Tractor. (1973, 16 mm, color, 14 min.) The film trains a young operator in the daily service of the tractor to the point where he demonstrates his proficiency as an operator. Rent from National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

Within the Frame of Safety. (color, 20 min.) International Harvester Company, 180 North Michigan Avenue, Chicago, Illinois 60611.

FILMSTRIPS

Safety on the Farm. (color, primary) Cartoon which dramatizes the need for safety precautions for children on the farm. Available for purchase from National Film Board of Canada, 630 Fifth Avenue, New York, New York 10020.

Tractor Safety. (slides) Rental fee, Cornell University Film Center, Ithaca, New York 14851.

BOOKLETS, LEAFLETS, AND MAGAZINES

Leaflets On Safe Use of Farm Equipment. Farm and Industrial Equipment Institute, 410 North Michigan Avenue, Chicago, Illinois 60611.

Petroleum Power Series (1) "Getting Acquainted With Your Tractor," (2) "Assuring Safe Efficient Operation," (3) "Improving Your Skills," (4) "Machinery Care and Safety," and (5) "Leader's Guide." National 4-H Service Committee, Inc., Program Services, 150 North Wacker Drive, Chicago, Illinois 60606.

Further Information: U.S. Department of Agriculture, Washington, D.C. 20250.

OTHER SOURCES

Farm and Industrial Equipment Institute, 410 North Michigan Avenue, Chicago, Illinois 60611.

Farm Equipment Manufacturers Association, 230 South Bemiston, St. Louis, Missouri 63105.

Farm Film Foundation, 1425 H Street NW., Washington, D.C. 20005.

Farm Safety Week Kit. Available in May from National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

Local State Agricultural Extension Service, Safety Specialist.

National Institute for Farm Safety, Inc., 460 Henry Mall, Madison, Wisconsin 53706.

National 4-H Service Committee, Inc., Program Service, 150 North Wacker Drive, Chicago, Illinois 60606.

U.S. Department of Agriculture, Motion Picture Service, Washington, D.C. 20250.

Minicycle Safety

Level C

MINICYCLE SAFETY UNIT - LEVEL C

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MINICYCLE SAFETY - LEVEL C

INTRODUCTION

Minicycles and trailbikes provide an exciting sport for many North Carolina youngsters. This unit is not intended to condone the practice of allowing youngsters in this age group to ride minicycles. This unit is concerned with the fact that many youngsters ride minicycles--and without any adequate safety training. Many youngsters are presented with a complex machine and a handbook; then they set out to drive on the most difficult kind of terrain. No data are available on the accidents which result from unsafe uses of minicycles, but these youngsters deserve some information on the safe, courteous, responsible ways to enjoy their machines. This unit presents such information so that students can make decisions for safety.

Minicyclists need to know their machines and to understand the potentials and limits. They must be able to make safety and maintenance checks and to operate the machines skillfully. Different terrains present different problems of which the young cyclist should be aware. Also, there are rules of common courtesy that every responsible off-the-road cyclist should follow. After the learning experiences in this unit, the young minicyclist should be better equipped to have many safe trips.

UNIT OBJECTIVES

1. To develop safe, responsible behavior among students who drive minicycles.
2. To educate the students in the basic skills and mechanical knowledge of the machine that are necessary to assess and handle risks on minicycles.

MINICYCLE SAFETY - LEVEL C

UNIT CHECKLIST FOR TEACHERS

This checklist is provided as a guide to assist you in determining your students' knowledge of minicycle safety practices.

1. Do your students understand the workings of their individual minicycles?
2. Can they find the controls by touch?
3. Do they know how to handle different driving surfaces?
4. Do they wear protective clothing when they ride?
5. Do they possess the necessary skills to drive a minicycle safely?
6. Do they make a safety check before they ride?
7. Do they follow the rules for safe, courteous, and responsible minicycling driving?

CHECK YOUR MINICYCLE SAFETY KNOW-HOW

1. Do you understand the workings of your individual minicycle?
2. Can you find the controls by touch?
3. Do you know how to handle different driving surfaces?
4. Do you wear protective clothing when you ride?
5. Do you possess the necessary skills to drive a minicycle safely?
6. Do you make a safety check before you ride?
7. Do you follow the rules for safe, courteous, and responsible minicycling driving?

MINICYCLE SAFETY - LEVEL C

CONCEPT I: KNOW YOUR MACHINE

OBJECTIVE

The student will be able to explain the importance of knowing the drivers manual and the machine itself. He will be able to identify the characteristics of the different types of miniature cycles.

CONTENT FOR DISCUSSION

The driver should know his manual in order to understand the workings of the individual machine. The manual tells the driver about the parts of the machine, their functions, and how and when to take care of them.

The driver should know his machine so well that he can find all of the controls by touch. The cyclist cannot afford to take attention away from the driving surface in order to find the controls. In an emergency, the cyclist has to act automatically.

The major types of miniature cycles are minibikes and miniature motorcycles. Minibikes are small bikes with a "lawn mower type engine" and small flat tires. Miniature motorcycles are small trailbikes and small motorcycles. They weigh between 59 and 63 kilograms (130 and 140 pounds) and can reach a maximum speed [illegible] kilometers (40 mph).

The driver must be aware of the potential and the limit of the machine and the dangers of driving at high speeds on various kinds of surfaces.

ACTIVITIES

1. Manual Information. Have students who own miniature cycles bring their manuals to school. Make a listing of the types of information contained in the manual. Have the students answer the following questions:
    a. What parts are labeled and identified?
    b. What are some of the controls that a driver must know by touch?

(Possible answers: ignition switch, clutch lever, gear change lever, choke, kick starter, throttle, headlight, horn, front brake lever, rear brake pedal.)

   c. What are some maintenance checks for a miniature cycle?
   d. How many of these maintenance checks are like those for a car? For a bicycle?

2. Guest Speaker. Ask a representative from a cycle shop to speak to the class about the different types of cycles and their advantages and limitations.

3. Minicycle Survey. Have students make a survey in the school or in certain grades to determine the number of students who have miniature cycles, the kinds of cycles, and why they chose those kinds.

4. Filmstrip for Discussion. On Two Wheels. Professional Arts, Inc., is a filmstrip on motorcycles. Emphasize the fact that no one under 16 can ride a minicycle or motorcycle on the street.

MINICYCLE SAFETY - LEVEL C

CONCEPT II: KNOW HOW TO HANDLE DIFFERENT DRIVING SURFACES

OBJECTIVE

The student will be able to explain the hazards of driving on different surfaces and how these hazards can be handled.

CONTENT FOR DISCUSSION

No one under 16 can drive a miniature cycle on any roadway, according to North Carolina law. This law applies to paved roads, paved parking lots, and any state-maintained road. Miniature cycles must be driven on private property, private roads, or on areas and trails designated for them. Thus miniature cycles are driven on many kinds of surfaces: grass, dirt, sand, mud, water, loose gravel, and rough ground. The handling of miniature cycles in these conditions is very difficult, and skill is very important for safety.

1. How to Handle Rough Surfaces.[13] If one cannot safely steer around an obstacle, he should slow down, take the obstacle straight on, and shift weight as far back as possible. The driver should "stand on the pegs" by gripping the handlebars firmly and pushing up with his legs to lift his body from the saddle. The knees should be loose and the lower legs should be perpendicular to the pegs. The wrist and arms should be loose, to handle the shock. The driver should return to a sitting position as soon as possible.
2. How to Handle Sand, Mud, and Water.[13] These conditions create difficulties in steering, balance, starting, and stopping. It is necessary to use more power than normal to keep driving through sand, mud, and water. One should accelerate and brake slowly and gradually. Stopping distances will be increased.
3. How to Handle Loose Gravel.[13] Driving on gravel is slippery and as dangerous as driving on marbles. One should drive slowly and accel-

erate, and brake slowly and gradually. Stopping distances will be increased.

4. How to Handle Grass.[13] Grass can be slippery especially when wet. One should drive at a lower speed and remember to brake slowly and evenly.

ACTIVITIES

1. Minicycle Ranges. Have the students make a survey of the areas in the community where miniature cycles can be ridden. Have a group of students write city or town officials concerning areas which are open and closed to miniature cycles. Have the students interview the city planner and other city officials about the possibility of future provisions such as minibike trails, courses, or parks.

2. Surface Survey. Have students interview miniature cycle owners in the school about the places where they ride. Make a graph of the different areas named. Determine whether these areas are open to miniature cycles and what surfaces are found in these areas.

3. Model Trail. Have students design a model minibike trail, course, or park. The model could be done in clay with miniature trees, etc. The model could be given to town officials or civic organizations as a suggestion for future plans.

4. What If . . . . Have students decide what they would do in the following situations and why. Have them suggest different ways these problems could be solved.
    a. There is no place to drive around my house except in the street, and that is against the law.
    b. There are a lot of state-owned dirt roads around my house, and there is never any traffic. Why can't I ride on them? I want to ride somewhere else besides around the house.

MINICYCLE SAFETY - LEVEL C

CONCEPT III: DRIVE WITH SKILL, CONTROL, AND SAFETY

OBJECTIVE

The student will be able to identify the protective clothing that a cyclist should wear, the checks which should be made before driving, and the techniques of safe, courteous, and skillful driving.

CONTENT FOR DISCUSSION

The cyclist should wear the following clothing for protection:

1. Safety helmet, goggles, or eye shields.
2. Gloves.
3. Long pants and long sleeves. There should be as little bare skin exposed as possible in order to reduce the dangers of scrapes.
4. Sturdy boots or shoes to reduce dangers of foot injuries. One should never ride barefoot or with sandals.

The cyclist should make the following checks for safety before driving:

1. Gas and oil levels.
2. Chain adjustment.
3. Tightness of spokes.
4. Steering.
5. Brakes.
6. Tire inflation.
7. Cables free and adjusted.

The cyclist should follow these techniques for safe, courteous, and skillful driving:

1. Drive defensively and watch for pets and children darting into the path of the cycle. Watch for unexpected items such as wires.
2. Make sure the cycle is in neutral when starting up.

3. Sit squarely and lean forward slightly.
4. Move out at a reasonable speed. Stunt driving is dangerous. Driving too fast or too recklessly for conditions is one of the major causes of accidents.
5. Know how to slow down and stop safely. To slow down, close the throttle and apply the brake gently. To stop quickly, turn off the throttle and apply the rear brakes; when the rear brake starts to take hold, apply the front brake by squeezing the hand lever and down shift. Squeeze the clutch lever to disengage the gear when the speed is reduced below 16 kilometers per hour (10 mph). Bring the motorcycle to a smooth halt before dropping one's foot to the ground. Know the distance it takes to stop safely. Remember that changes in surfaces affect stopping distance and can increase chances of loss of control.
6. Gear up and gear down smoothly. Remember to engage the clutch gradually and to open the throttle gently in up-shifting. In down-shifting, decrease the throttle speed before reengaging the clutch to prevent shock from sudden reduction in speed.
7. Avoid high speed or sudden wheel turns.
8. Do not turn the wheel and apply the brakes at the same time; this can cause skids.
9. Never ride with a passenger. Miniature cycles are not designed for more than one person.
10. Do not ride on streets, highways, or roads. Serious or fatal accidents can occur because minibikes are hard to see and give the driver no protection.
11. Do not let others borrow one's minibike. A person who lends his bike to others runs the risk of the driver getting hurt and the bike being damaged.
12. Always ask permission before riding on private property.
13. Do not remove the muffler; loud cycles make enemies.
14. When riding on trails, maintain a safe following distance and watch for sudden stops.

ACTIVITIES

1. Dress Sensibly. Have students discuss the purpose of protective clothing. Have students tell which of these articles are worn by those that they have seen driving miniature motorcycles. Discuss the following questions:

   a. Is protective clothing less important for minibike or miniature motorcycle drivers than for those who drive regular-sized motorcycles?
   b. Why do you think some people do not wear protective clothing when they drive miniature cycles?
   c. What are some injuries that you know have resulted from not wearing protective clothing?

2. Safety Checks. Discuss the following questions with the students:

   a. Which of the safety checks that should be made before driving are like those for bicycles? For cars?
   b. What are some things that could happen if one did not make safety checks before driving?

3. Creative Cartoons. Have students draw cartoons of possible hazards which the cyclist should watch out for and actions of the driver which can cause accidents.

4. Shop Talk. Ask a miniature motorcycle dealer to talk to the class about the procedures for starting, slowing, stopping, and changing gears. Possibly the dealer could bring a miniature cycle to school to demonstrate.

5. You Tell 'Em. Have interested students diagram gear changes, rear brake control, handbrake control, and throttle control. The students may present their diagrams to the class.

6. Discuss the following statements:

   a. Miniature cyclists have a responsibility to be courteous as well as safe.

b. I can drive my minibike on a neighbor's land without asking. They won't care and I'm not going to bother anything.

c. I like to drive with my muffler off. It gives me a sense of power and speed, and it drowns out everything else.

7. Skills Test. The minibike rodeo (p. -) is suggested as a means of testing the skills of students on their minibikes or minature motorcycles.

MINICYCLE SKILLS RODEO

The minicycle rodeo is suggested as a means of testing the actual skills of the students on their minibikes or miniature motorcycles. This rodeo could be sponsored by interested persons in the community, by teachers, or by the PTA. A qualified person, such as a parent who is a skilled motorcyclist or a representative from a local motorcycle shop, should be involved. Require that all participants wear the necessary protective clothing.

If the school is involved in sponsoring this type of event, the local school board should be contacted for approval, and releases for insurance purposes and so on should be carefully worked out.

Task 1: Knowledge of Parts. Have the driver identify the following parts, where applicable.

- Battery
- Tool kit
- Foot pegs
- Fork lock
- Shock absorbers
- Neutral; oil; high-beam indicators
- Steering damper
- Oil and fuel filler caps
- Tachometer and speedometer
- Transmission
- Cables
- Kill switch

Task 2: Prestart Check.[13] Have the student make a prestart check before mounting the machine. Make sure to--

a. Check the headlight, backlights, and horn.
b. Check the fuel and oil levels.
c. Check the cables.
d. Check the kickstand.
e. Check the wheels and tires (cuts, inflation, loose spokes).
f. Check the power chain tension.
g. Unlock the front fork (if applicable).
h. Turn on the fuel supply valve.

Task 3: Knowledge of Controls.[13] Have the driver mount the minibike or miniature motorcycle correctly and take the proper riding position. Have an adult call out the following directions when applicable. The driver should be able to operate the following controls by touch and should not look down while performing these operations.

a. Turn the ignition switch on and off.
b. Turn the fuel supply valve to on, off, and reserve positions.
c. Squeeze the clutch lever.
d. Change gears.
e. Adjust the choke.
f. Operate the kick starter.
g. Open the throttle.
h. Turn on the headlight; put it in the high-beam and low-beam positions.
i. Give signals for left turn, right turn. (If machine does not have electrical signals, use hand signals.)
j. Sound the horn.
k. Use rear brake pedal.
l. Use front brake lever.

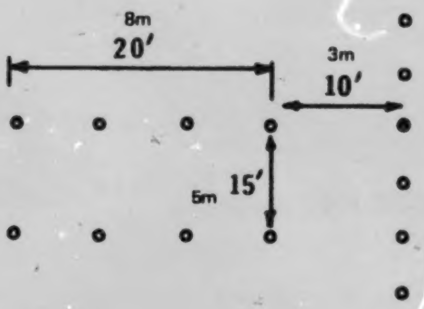
Task 4: Engine-Off Braking. Have an adult push the minibike or miniature motorcycle with the engine off, in neutral, and with the clutch engaged. After the cycle is moving, instruct the driver to stop. He should apply the rear brake first, then the front brake; the cycle should brake in a straight line.

Task 5: Engine-On Braking.[13] The course is made up of three markers set 5 meters (15 feet) apart. The driver will start the engine and move out in a straight line at the first marker. He will stop at the second and third markers. At the third, he will shut off the engine and dismount properly. He will turn the cycle around, mount, start the engine, and repeat the course. When braking, the driver should apply the rear brake first, and then the front brake. The cycle should brake in a straight line. When shutting off the engine and dismounting, the driver should:

a. Place the gear-change lever in neutral.
b. Turn the ignition key to the "off" position.
c. Shift to first gear to prevent rolling.
d. Dismount while holding both handlebar grips.
e. Place cycle on its kickstand.
f. Turn gas supply off by closing the fuel supply valve.
g. Remove ignition key.
h. Turn the front wheel to one side and turn the key in the fork or steering lock to lock the front wheel in this position.

/ (5 meters) / (5 meters) /

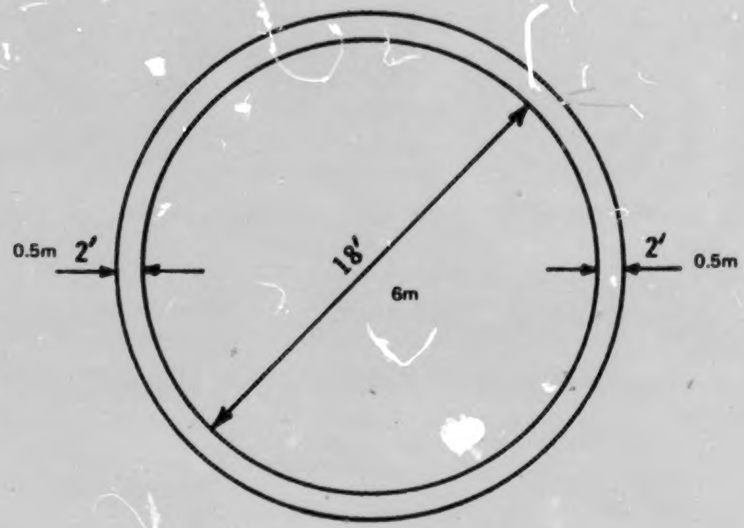
Task 6: Evasive Maneuvering. The driver will drive between two lines of cones 5 meters (15 feet) apart. When he reaches the end of the lines, an instructor will call out left or right. The driver must turn left or right to avoid hitting a line of cones set 3 meters (10 feet) from the ends of the two lines. The driver will go around the right or left end of the line of cones to the finish line.



Task 7: Straight-Line Driving. The driver will drive between two lines of cones 6 meters (20 feet) long and 1 meter (4 feet) apart without knocking over any of the cones. (Cones can be paper bags or paper cups filled with sand, balloons, etc.)

Task 8: Speed Control. The driver will weave in and out of 10 cones set 2 meters (8 feet) apart in a straight line. The driver should complete the course without missing a turn or knocking down a cone.

Task 9: Balance. The driver will drive between two circles for four revolutions. The inner circle is 6 meters (18 feet) in diameter and the outer circle is 7 meters (22 feet) in diameter. The driver must stay in the 0.5-meter (2-foot) path without crossing any of the lines marking the boundary of the circles.



Task 10: Standing on the Pegs. Have the cyclist drive over an obstacle such as a 10 cm × 10 cm (4" × 4") piece of lumber. The driver should follow the procedure of "Standing On the Pegs" described in the content for discussion. Have a veteran motorcyclist demonstrate the technique and critique participants. Use your judgment to determine if your youngsters are prepared to handle this activity safely.

RESOURCE LIST

ORGANIZATIONS

Aetna Casualty and Surety Company, Driver Education Services, 151 Farmington Avenue, Hartford, Connecticut 06115.

Allstate Insurance Company, 7770 Frontage Road, Skokie, Illinois 60076.

American Automobile Association, 1712 G Street NW., Washington, D. C. 20006.

American Automobile Association-North Carolina, Carolina Motor Club, Inc., 701-3 South Tryon St., P.O. Box 60, Charlotte, North Carolina 28202.

Bicycle Manufacturer's Association of America, 1101 15th Street NW., Suite 304, Washington, D.C. 20005.

National Bicycle Dealers Association, 29025 Euclid Avenue, Wickliffe, Ohio 44092.

National Education Association, American Association for Health, Physical Education and Recreation, 1201 16th Street NW., Washington, D. C. 20036.

National 4-H Service Committee, Inc., Program Services, 150 North Wacker Drive, Chicago, Illinois 60606.

National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

North Carolina Department of Motor Vehicles, Traffic Safety Education Division, 1100 New Bern Avenue, Raleigh, North Carolina 27611.

North Carolina Department of Public Instruction, Education Building, Raleigh, North Carolina 27611.

North Carolina Department of Transportation, Bicycle Coordinator, P.O. Box 25201, Raleigh, North Carolina 27611 (for bikeways information).

North Carolina State University, Agricultural Extension Service, Department of Agricultural Information, Box 5037, Raleigh North Carolina 27607.

Schwinn Bicycle Company, 1856 Kastner Avenue, Chicago, Illinois 60635.

University of North Carolina at Chapel Hill, Highway Safety Research Center, Craige Trailer Park, Chapel Hill, North Carolina 27514.

The Wheelmen, 6239 Anauista, Flint, Michigan 48507.

RESOURCE LIST - MINICYCLE SAFETY

FILMS, FILMSTRIPS*

Basic Rider Training Program. (1970, color, 22 min.) Yamaha International Corporation, 7733 Telegraph Road, Montebello California 90640. (Write for a list of other films available through free loan service.)

Harley-Davidson Motor Company, Advertising Department, 3500 West Juneau Avenue, Milwaukee, Wisconsin 53201. (Free loan film services; write for list of available films.)

The New Ride. (1972, 16 mm, color, 30 min.) A film dealing with minibike safety. American Honda Motor Co., Inc., 100 West Alondra, Gardena, California 90247. (or contact local dealer)

On Two Wheels. (1972, 35 mm strips, 3 filmstrips, 25 min. each) Professional Arts, Inc., 1752 Parrott Drive, San Mateo, California 94402.

*Most films listed are related to motorcycles, not minicycles per se.

BOOKS FOR TEACHERS

Driving in the Two-Wheel World. Self-instruction manual on driving two-wheeled motor vehicles. A programmed instruction text prepared by American Honda Motor Company, Contemporary Education, Inc., Lexington, Massachusetts (193 pages).

Handbook of the Driver Education Progam for Motorbikes. Universal Underwriters Insurance Company, 5115 Oak, Kansas City, Missouri 64112.

Policies and Guidelines for Motorcycle Education. National Commission on Safety Education, National Education Association, 1201 16th Street NW., Washington, D.C. 20036.

BOOKS FOR STUDENTS

Clymer, Floyd. A Treasury of Motorcycles of the World. Santa Cruz, California: Bonanza Books, 1965.

Freedom of the Road. Students will get the "in" advice from famed Grand Prix racer Don Gurney, John C. McCormack who engineered the lightweight boom, and Walt Fulton, a great in motorcycle competition. Free if used in a classroom setting. Consultants to Management, Inc., P.O. Box 1293, Studio City, California 91604.

Radlauer, Edward. Motorcycles. Glendale, California: Bowmar, 1967, 32 pages.

BOOKLETS, LEAFLETS, AND MAGAZINES

The Beginning Rider Course. . . for Novice Motorcycle Riders of All Ages. Motorcycle Safety Foundation, Publication Service, 1001 Connecticut Avenue, NW., Washington, D.C. 20036.

Common Sense Tips for Safe Sportcycling. Basic information for safe riding; excellent pictures. Yamaha International Corporation, 7733 Telegraph Road, Montebello, California 90640.

Hey! Don't Forget Me! - urges use of safety helmet; Now You're a Cycle-Sport Enthusiast - good conduct and safe riding; Stone Age Rules of the Road. Motorcycle, Scooter and Allied Trades Association, P.O. Box 231, Worthington, Ohio 43085.

It's Smart to Play It Safe. (pamphlet, 1967) Ride Safe--It's More Fun (pamphlet); Rules of the Road (pamphlet on motorcycle safety, 16 pages); A Little Advice on Little Bikes (1972). American Honda Motor Company, Inc., 100 West Alondra, Gardena, California 90247.

Motorbikes Are Fun--Keep Them That Way. (pamphlet) Midwest Mutual Insurance Agency, 4105 South Park Street, Madison, Wisconsin 53713.

Motorcycle and Motor-Driver Cycles Study Unit. Illinois Department of Safety Education, Driver Education Office of Superintendent of Public Instruction, Springfield, Illinois 62706.

Motorcycle Rider's Guide. Basic riding tips and some diagrams; free in small quantities. Washington State Department of Motor Vehicles, Olympia, Washington 98501.

Motorcycles. For Intermediate to Jr. High, Safety Educational Data Sheet #98-revised. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

Motorcycling and You. (16 pages, $.25 each) Channing L. Bete, Inc., 45 Federal Street, Greenfield, Massachusetts 01301.

Reading Before Riding and Your Rithmetic Will Add Up to Motorcycle Safety. Industry Council, Inc., 1001 Connecticut Avenue, Washington, D.C., 20036.

Ride-Right Tips from Harley-Davidson. 18 page booklet, $.25. Harley-Davidson Motor Company, 3500 West Juneau Avenue, Milwaukee, Wisconsin 53201.

South Carolina Motorcyclist Handbook. South Carolina State Highway Department, Columbia, South Carolina 25211.

Two-Wheeled Wisdom. Harley-Davidson Motor Company, Administrative Department E-5, 3500 West Juneau Avenue, Milwaukee, Wisconsin 53201.

Yamaha Basic Rider Training Instruction Course. Yamaha International Corporation, P.O. Box 6600, Buena Park, California 80620.

Subject Area Cross-Reference
Level C

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I - Individual
T - Teacher Preparation Required
P - Parental Involvement

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Minicycle Ranges	G-I	406
Surface Survey	G-I	406
Shoptalk	G	409

General Safety Activities

Activity	Type of Activity	Page
Pedestrian Safety		
Introduction (Facts about Pedestrians)	G-I	16
Evaluation Check	G-I	48
Discussion (Contrasting Sounds)	G-I	48

Activity	Type of Activity	Page
Trick or Treat	G-I	51
Spot the Hazards	G-I	56
Shapeup	G-I	66
Step and Stop	G-I	66
Pavement Markings	G-I	67
Traffic Court	G-I	82
Bicycle Safety		
Hand Talk	G-I	166
Riding with the Traffic	G-I	166
Turning Left--Right	G-I	169
Class Discussion (Being Seen)	G-I	169
Let's Build a Bike	G-I	172
Bicycle Demo	G-I	173
Safety Check Your Bike	T-G-I-P	173
Bike Clinic	G-I	173
The Safe Route	G-I	192
Clothes-Related Accidents	T-G-I	194
Get on the Safe Way	G-I	211
Get off the Safe Way	G-I	212
School Bus Safety		
What If	G-I	262
Discussion Questions (Behavior on the Bus)	G-I	269
Good Passenger of the Week	G-I	270
Best Bus Award	G-I	270
Do Gooder	G-I	270
Go to the Head of the Bus	G-I	272
Suggestions for Involving Parents	T-G-I-P	272
Hands On!	T-G-I	286
Who Looks Out for You?	G-I	286
Checklist	G-I	287
Emergency Procedures	G-I	297

Activity	Type of Activity	Page
Passenger Safety		
Discussion (Entering and Exiting)	G-I	315
Who Needs Them	G-I	324
Hands On!	G-I	336
Measure Up	G-I	336
Introductory Questions (Passenger Behavior)	G-I	352
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Student Rules	G-I	353
Game Time	G-I	363
Minicycle Safety		
Manual Information	G-I	403
What If	G-I	406
Dress Sensibly	G-I	409
Discussion (Safety Checks)	G-I	409
Skills Test	T-G-I	410
Discussion Statements	G-I	409

Science

Activity	Type of Activity	Page
Pedestrian Safety		
Experiments with Light	G-I	39
Blind Spots	G-I	41
Wear White Demonstration	G-I	49
Light Refraction and Reflective Materials	G-I	50
Bicycle Safety		
Dollar Bill Experiment	G-I	127
Measure Your Reaction Time	G-I	128
Defensive Drivers Game	G-I	128
Surface Hunt	G-I	131
Look at It	G-I	131
Sliders	G-I	132

Activity	Type of Activity	Page
Increasing Friction	G-I	132
Friction Free	G-I	132
Speed, Reaction Time and Stopping Distances	G-I	134
Measure It	G-I	134
School Bus Safety		
Inertia Experiment	G-I	286
Efficiency Experts	G-I	286
Passenger Safety		
Inertia Experiment	G-I	353
Farm Vehicle Safety		
Reaction Demonstration	G-I	388
Tractor Tipping	G-I	388
Minicycle Safety		
Model Trail	G-I	406

Outdoor Activity/Field Trip

Activity	Type of Activity	Page
Pedestrian Safety		
Gap Time	G	33
Bicycle Safety		
Bike Clinic	T-G-I-P	142
Skill Games	T-G	181
Skills Rodeo	G	182
School Bus Safety		
Field Trip Experts	G	264
Hands On!	G	286
Emergency Procedures	G	297

Activity	Type of Activity	Page
Passenger Safety		
Hands On!	G	336
Farm Vehicle Safety		
Reaction Demonstration	G-I	388
Minicycle Safety		
Surface Survey	G-I	406
Skills Rodeo	G	411

Health/Physical Education/Games

Activity	Type of Activity	Page
Bicycle Safety		
Categories	G-I	120
Muscle Bound	G-I	120
Momentum	I	133
Stopping Distances	G-I	133
Traffic Circles	I	161
Distraction	I	161
Pedal Pushers	G-I	212
Skill Games	G-I	212
Skills Rodeo	T-I	213
School Bus Safety		
Distraction Demonstration	G-I	269
Passenger Safety		
First Aid	G-I	363

Visual Perception

Activity	Type of Activity	Page
Pedestrian Safety		
Judging Distance	G	31

Activity	Type of Activity	Page
Gap Time	G-I	33
Blindspots	I	41
Peripheral Vision	I	42
Look at the Bull's Eye	I	43
Crayon-Resist Pictures	I	49
Bicycle Safety		
Measure It	G-I	134
Traffic Circles	G-I	161
Distraction	G	161
School Bus Safety		
Measure It	G-I	263

Auditory Differentiation

Activity	Type of Activity	Page
Pedestrian Safety		
Do You Get the Message?	G-I	4
Listening for Information	G-I	46
Listening for Enjoyment	G-I	47
Listening for Evaluation	G-I	48
Mystery Sounds Puzzle	G-I	49

Mathematics

Activity	Type of Activity	Page
Bicycle Safety		
Distance Car Covers in One Second	G-I	134
Bar Graph Activity	G-I	134
Speed-Distance-Time Word Problems (2)	G-I	134
Construction Bar Graphs	G-I	134

Activity	Type of Activity	Page
School Bus Safety		
Working with Numbers	G-I	255
Ciphers	G-I	263
Distraction Demonstration	T-G-I	269
Color Code	G-I	287

Nitty Gritty City

A SAFETY GAME

LEVEL C

INTRODUCTION:

Every day girls and boys involve themselves in activities requiring transportation to and from a destination. Their mode of travel often varies. In a 24 hour period, a young person might walk to a school bus, ride a bus to and from school, and drive a bike to a friend's house after school. In this example, the traveler's role has changed three times: 1) from a pedestrian, 2) to a passenger, 3) to a cyclist. Each role change requires the young person not only to be an observer of the total traffic environment, but also to be an active participant in traffic situations specific to the mode of travel, whether walking, riding, or driving.

GOAL:

To present the student with a variety of passenger, pedestrian and cycling situations, which require decisions about safe or hazardous behavior.

LEARNER OBJECTIVES:

1. To describe why a traffic situation is safe or hazardous to the pedestrian, passenger or cyclist.
2. To identify traffic signs and signals most common to N.C. traffic environments.
3. To select from two choices which behavior is safe or hazardous in the pictures on the game cards.

INSTRUCTIONAL APPROACH:

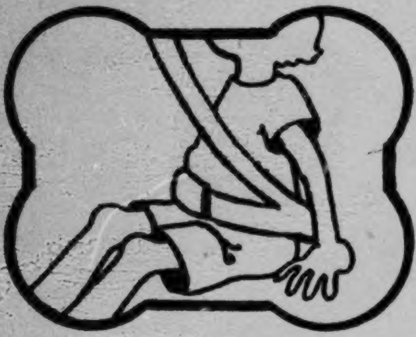
Unique to the design of this game is the opportunity for the student to switch roles (from that of a pedestrian to a passenger, to a cyclist) at any given turn in the game. Safe decision making is awarded safety points and poor judgment is penalized. The game does not stress speed; the game is over when all players have reached the destination, and the winner is the player who has accumulated the greatest number of safety points.

This game is designed for a small group setting as a follow-up activity to a safety unit. It is structured so that 2-5 students can go to a separate place in the classroom and/or learning center to play the game with little teacher involvement. (If the game is used as an introductory activity to a safety unit, it is recommended that the teacher distribute the game to groups of students and then observe the game playing, noting any difficulties encountered by the students.)

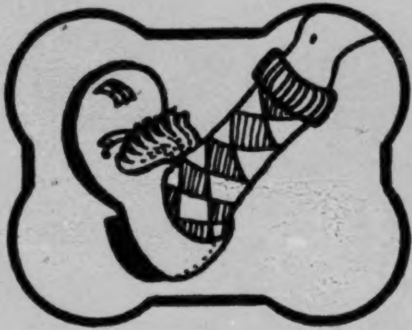
Student Involvement: It is recommended that each student read aloud the questions and answers so that all players can benefit from the content. As students advance around the board, reading cards and interpreting visual panels on the cards, they will be gaining reinforcement for a positive attitude toward safety.

GAME STRATEGY:

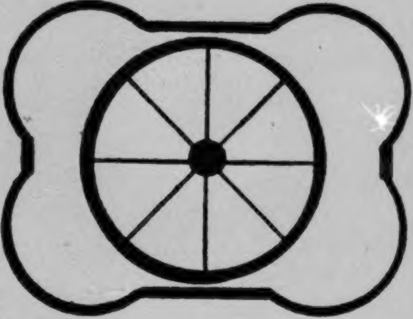
Each player chooses a token and rolls the die to determine who should be first. This player is also designated as Banker and is responsible for the awarding of points to players, keeping a record of debts, and managing the Safety Club Bank. Each player takes his turn and rolls the die to determine the number of moves that he can take on the board. Five symbols are repeated on the path leading to the destination, NITTY GRITTY CITY.



PASSENGER QUIZ

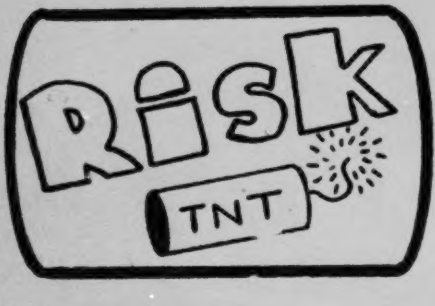


PEDESTRIAN QUIZ



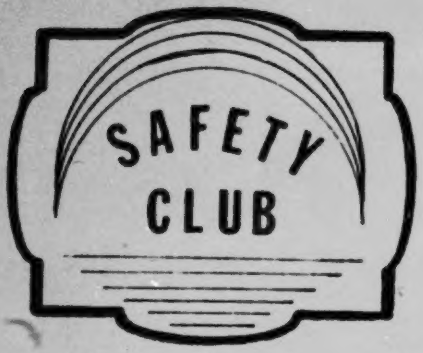
CYCLIST QUIZ

When a player lands on PASSENGER QUIZ, PEDESTRIAN QUIZ, or CYCLIST QUIZ, he must draw a card matching the symbols on the board where he has landed. He must read the question aloud and give an answer. He looks inside the card to find the correct answer. If correct, he gains one safety point, if incorrect he must forfeit a point and place it inside the Safety Club Bank located in the center of the board. (If a player is broke, he must borrow from the Banker, and repay his debt as he acquires new points.)



RISK

RISK Cards require no response from the student, but he must read the situation aloud and open the card to determine whether he is to gain or lose safety points.



SAFETY CLUB

If a player lands on a SAFETY CLUB space, he collects all the points that have accumulated in the center of the board. (The Banker must add 5 points to the Safety Club Bank each time it is emptied.)

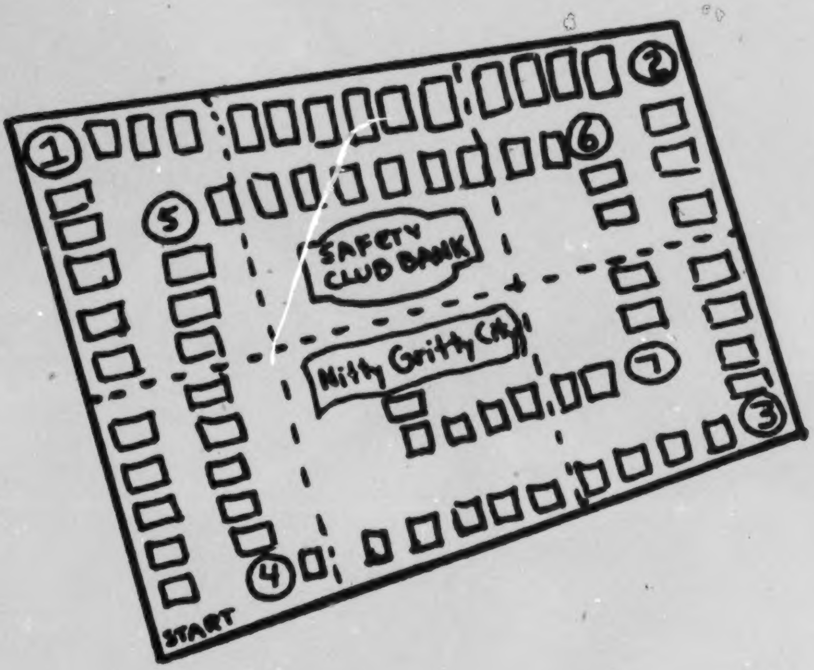
When a player reaches NITTY GRITTY CITY he is to remain there. Although he no longer moves his token, he is still in the game. On his turn he has the option of drawing a card from ANY pile, and thus he continues to gain or lose safety points.

WIN CRITERION:

When all the players have reached NITTY GRITTY CITY, the player who has accumulated the greatest number of safety points is the winner.

TO ASSEMBLE GAME:

To assemble the NITTY GRITTY CITY game board use white glue or rubber cement. Mount the six game pages together on posterboard in the following manner: START should be in the lower left hand corner. The SAFETY CLUBS are numbered to provide you with a reference to correct placement. The numbers in the diagram correspond with the numbers on each SAFETY CLUB.



Each page of game cards (PASSENGER, PEDESTRIAN, CYCLIST and RISK) should be cut along the broken line and folded in half.The front of each card contains a symbol, the back contains a safety cartoon; the QUIZ cards pose a question below this, the RISK cards state a situation. The cards should be folded so that the answer or result is revealed on the inside of the card.The packet includes a page of tallies that should be cut apart to be used as SAFETY CLUB POINTS.

SAFETY CLUB POINTS

Cut these tallies apart and use as SAFETY CLUB POINTS.

SAFETY CLUB POINTS

Cut these tallies apart and use as SAFETY CLUB POINTS.

SAFETY CLUB POINTS

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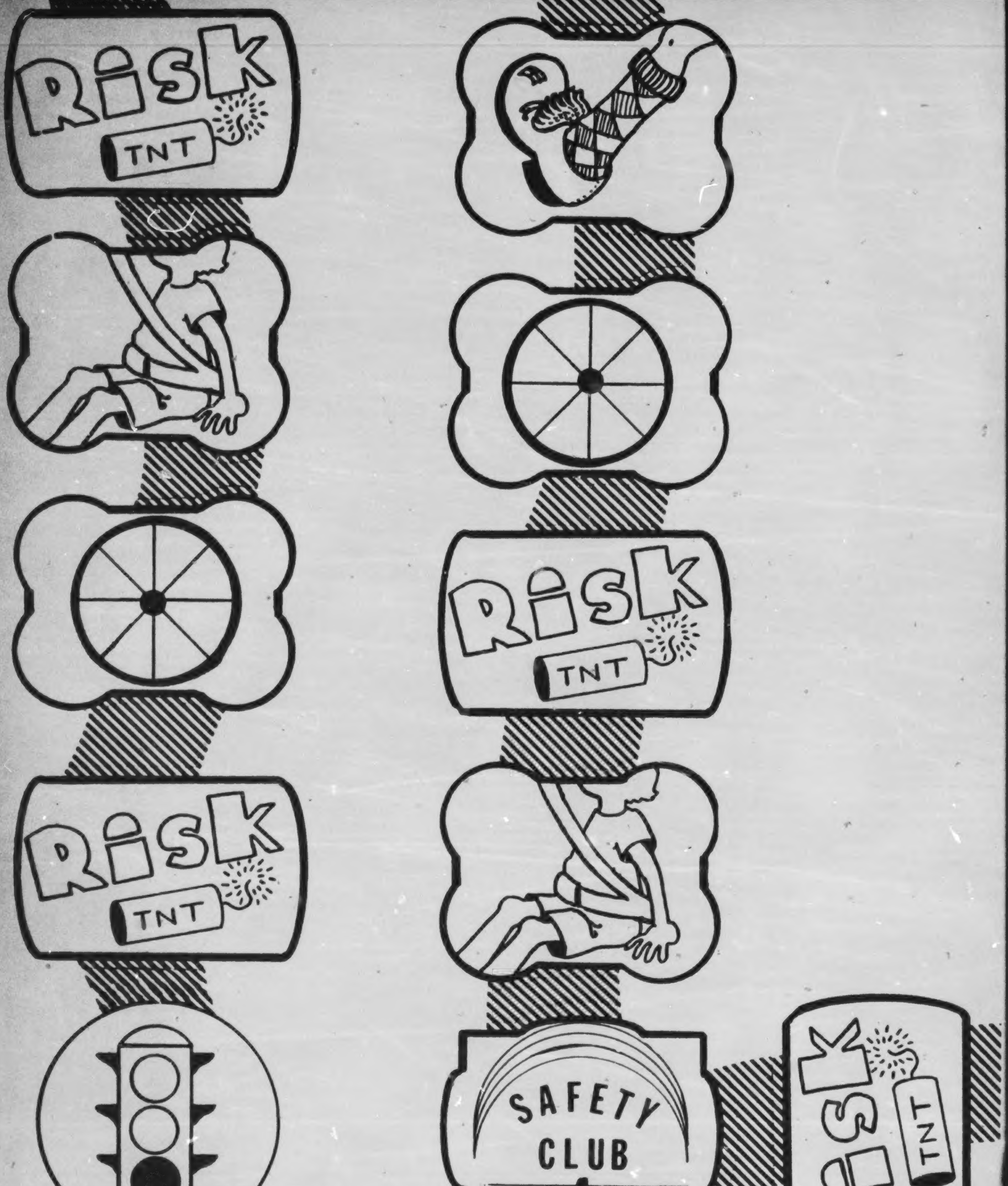
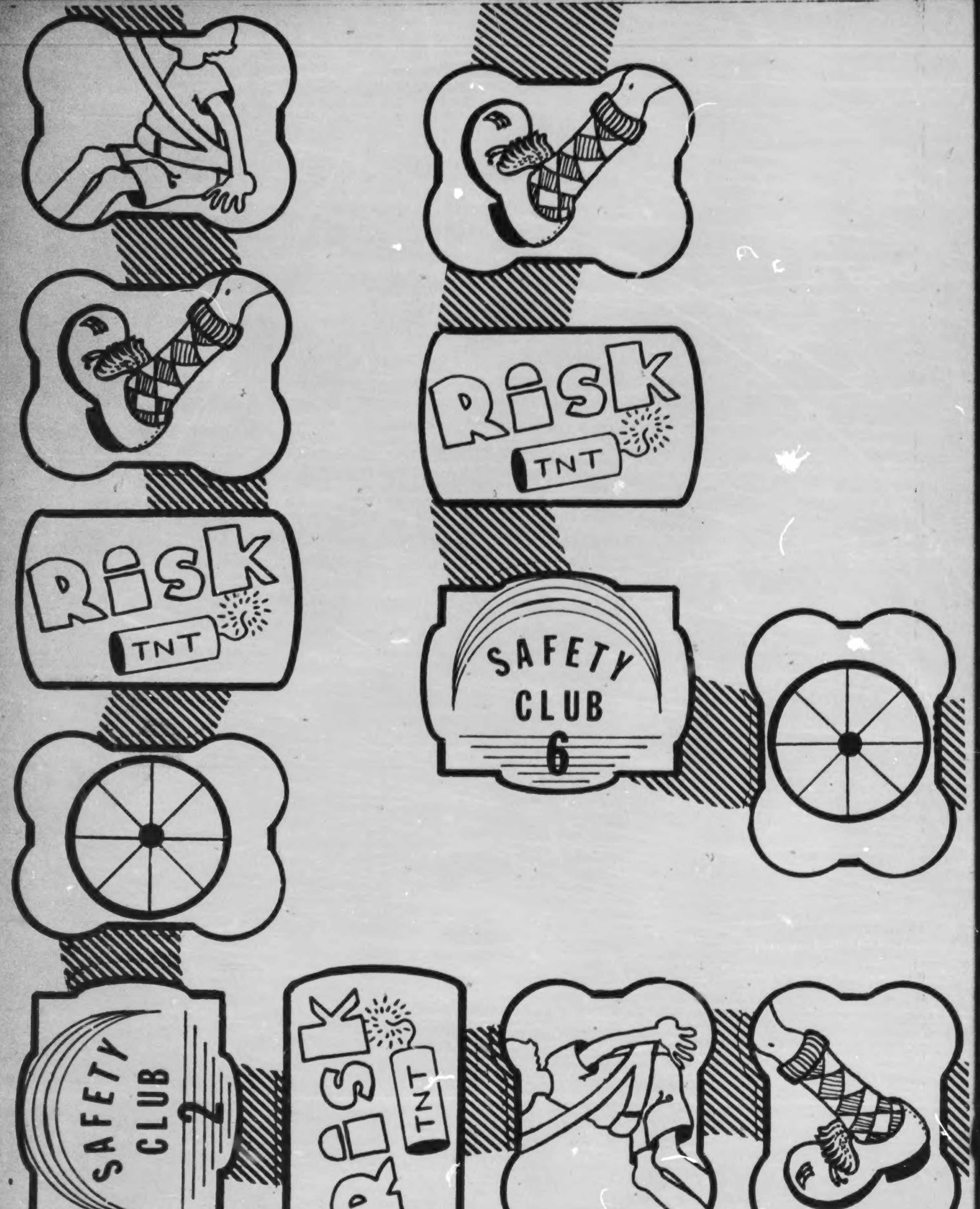
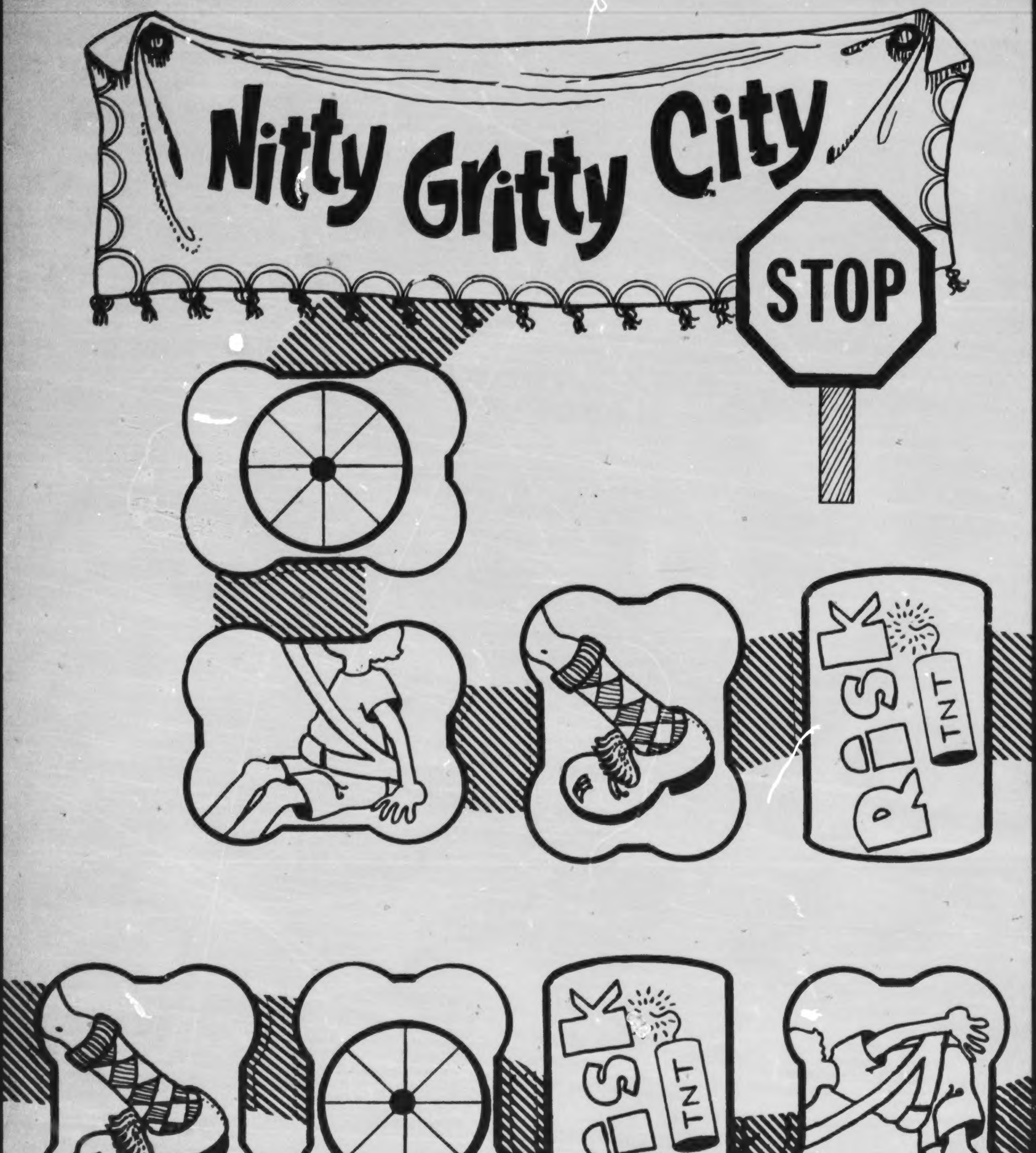
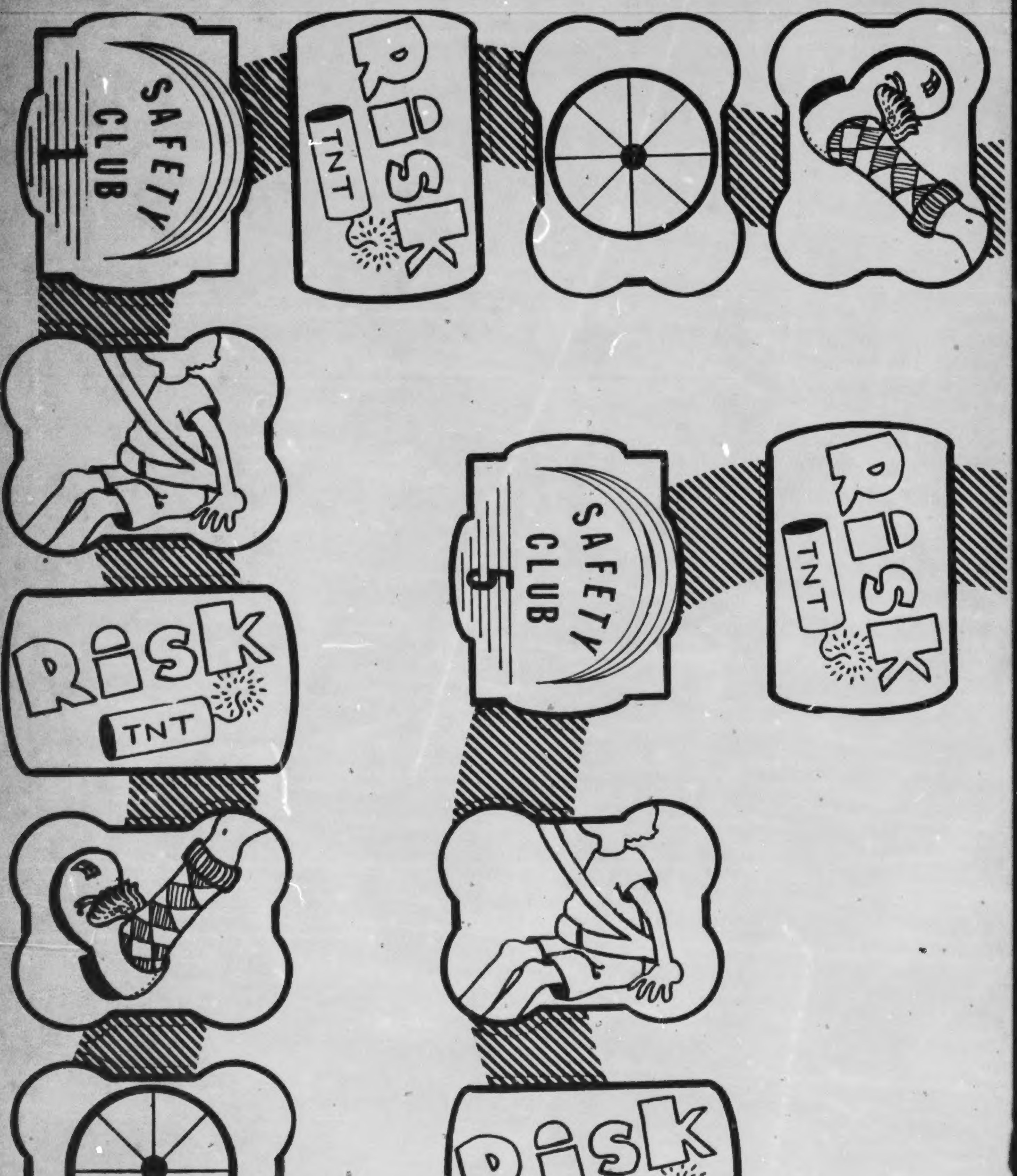
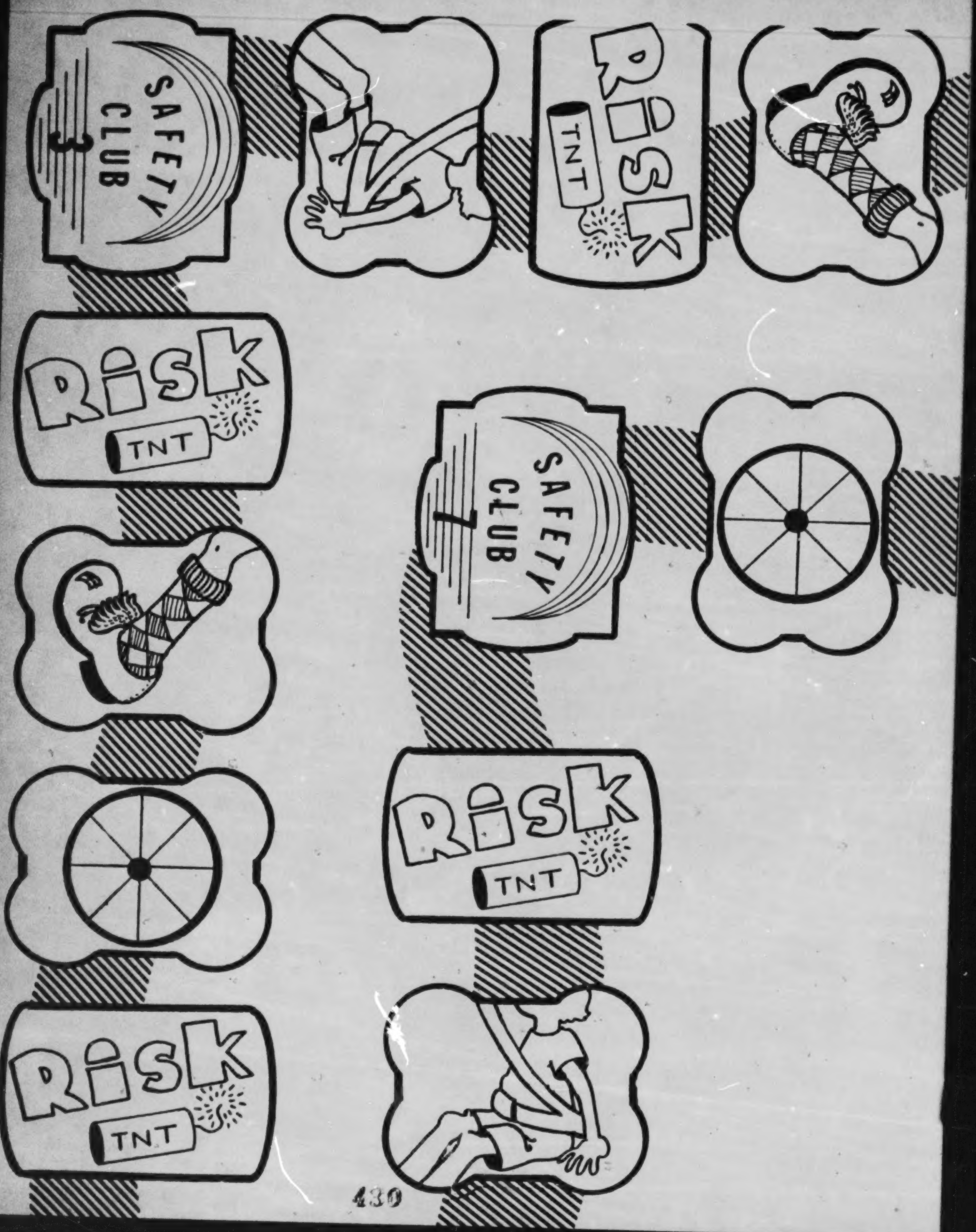
Cut these tallies apart and use as SAFETY CLUB POINTS.

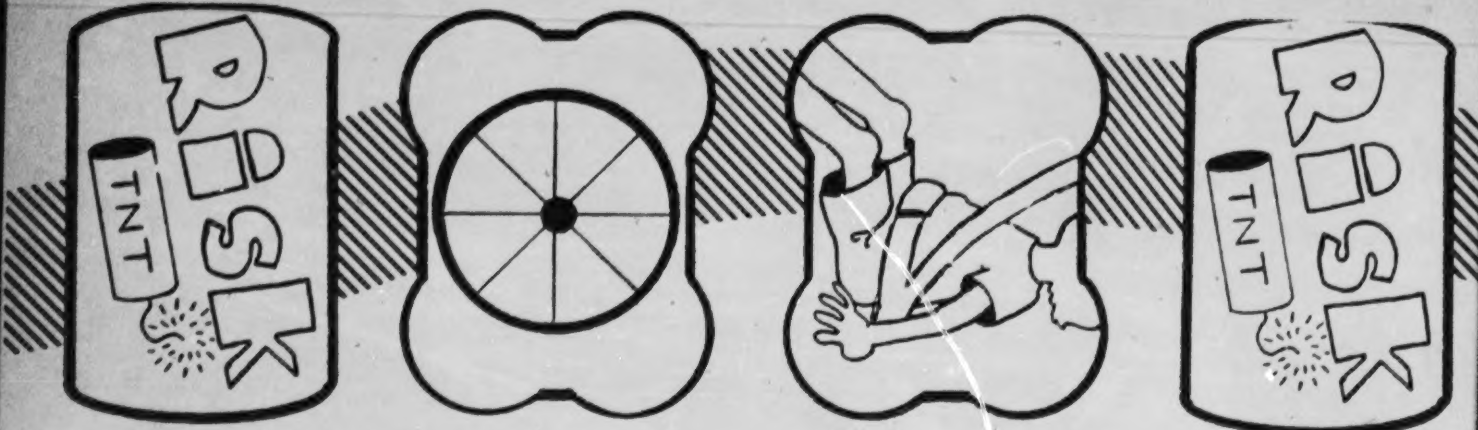

RISK
TNT
RISK
TNT
RISK
TNT
SAFETY CLUB
4
RISK
TNT
start

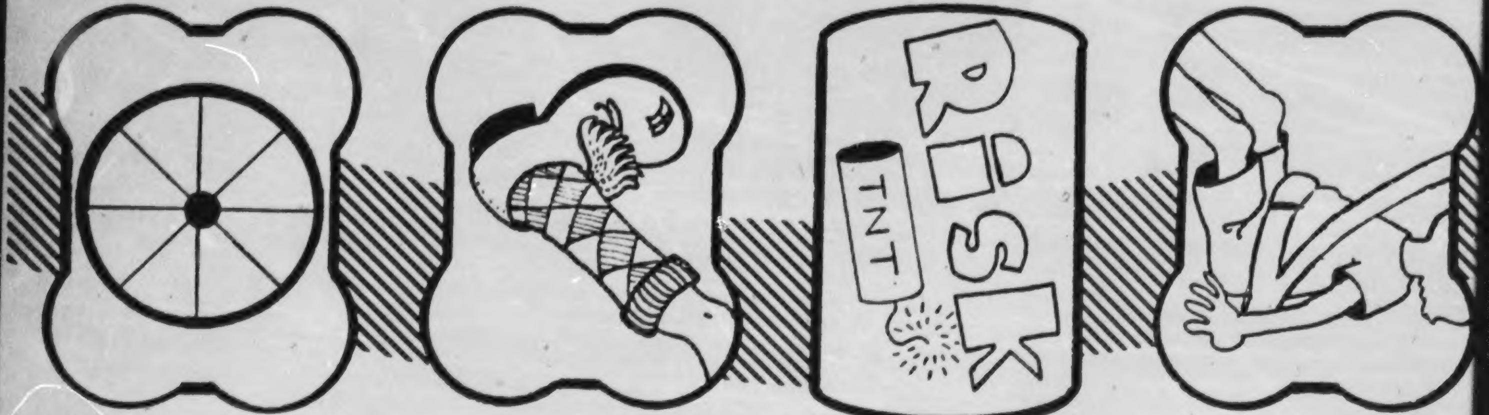

RISK
TNT
RISK
TNT
SAFETY CLUB 6
SAFETY CLUB 2
RISK
TNT

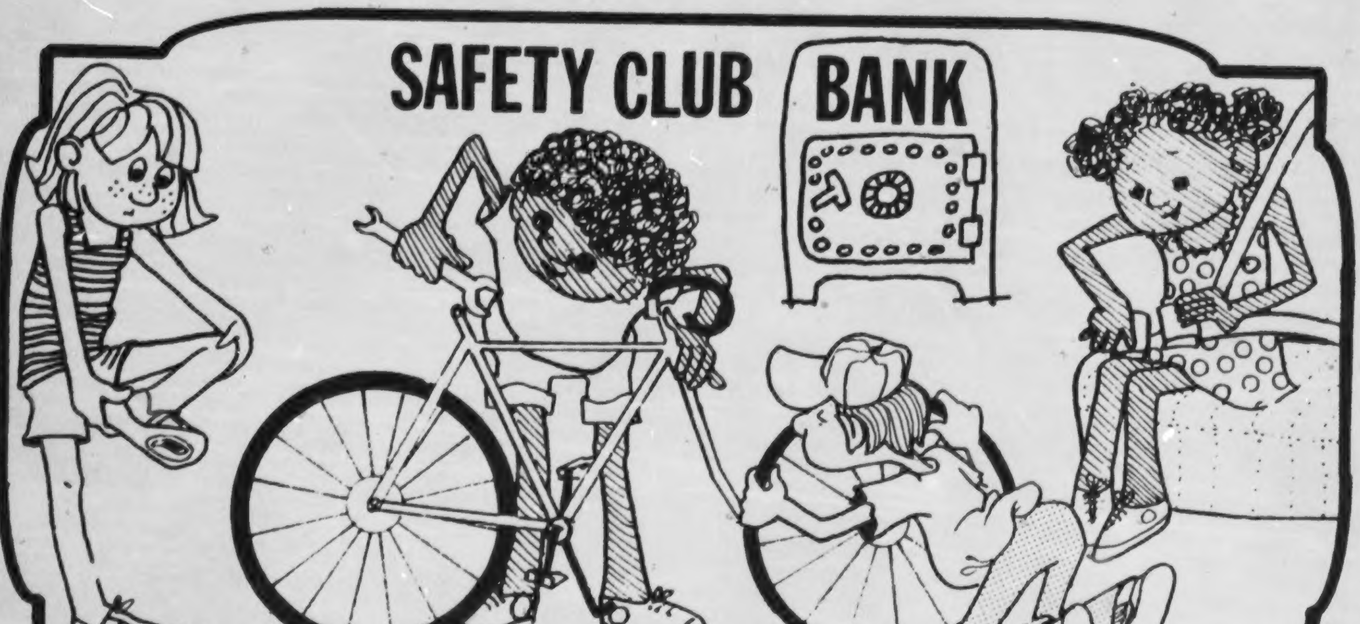

Nitty Gritty City
STOP
RISK
TNT
RISK
TNT

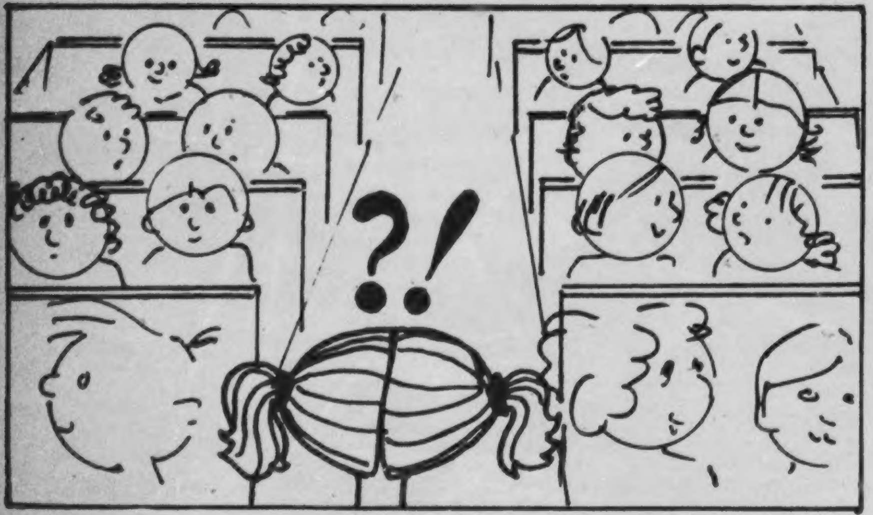

SAFETY CLUB
1
RISK
TNT
RISK
TNT
SAFETY CLUB
5
RISK
TNT
RISK
TNT


SAFETY CLUB
3
RISK
TNT
RISK
TNT
SAFETY CLUB
7
RISK
TNT
RISK
TNT

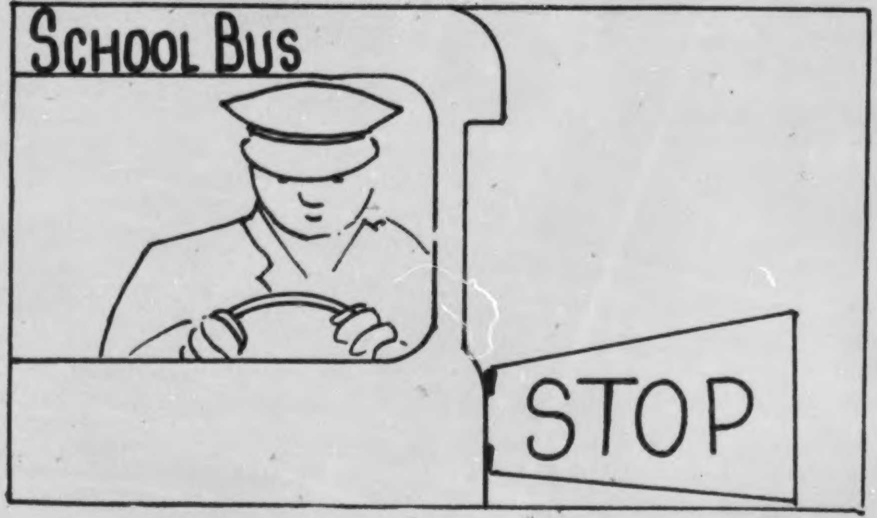

RISK
TNT
RISK
TNT


RISK
TNT


SAFETY CLUB
BANK



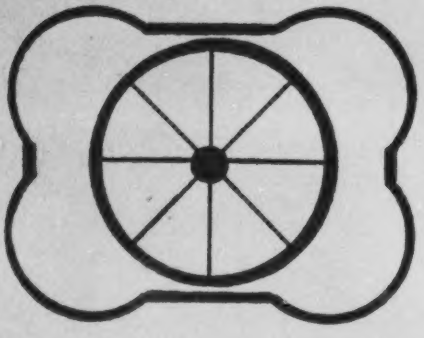
If you have to stand on a crowded bus, which direction should you be facing?

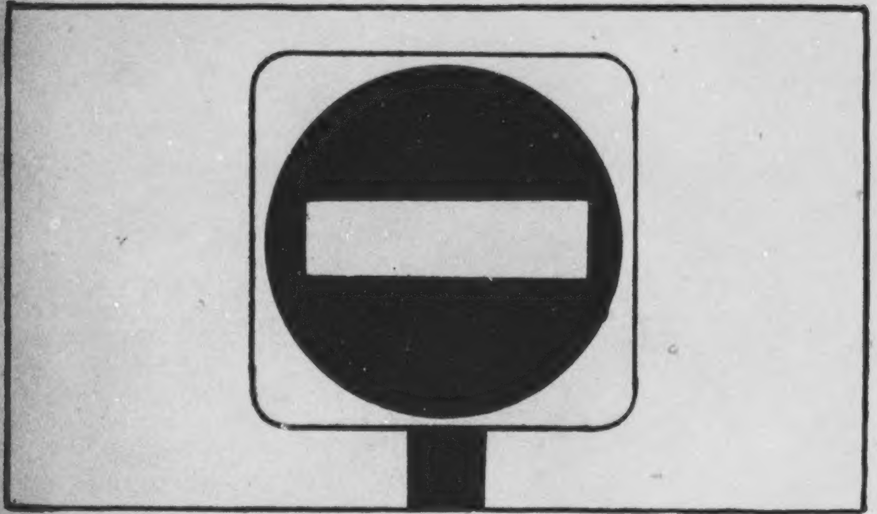

SCHOOL BUS
STOP

What does this sign tell anyone driving a vehicle?

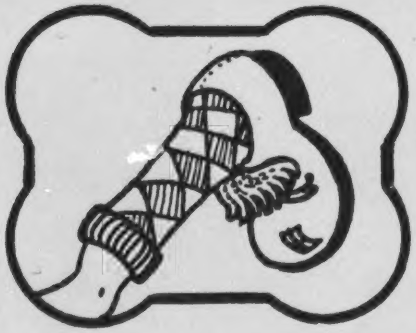
The front of the bus.

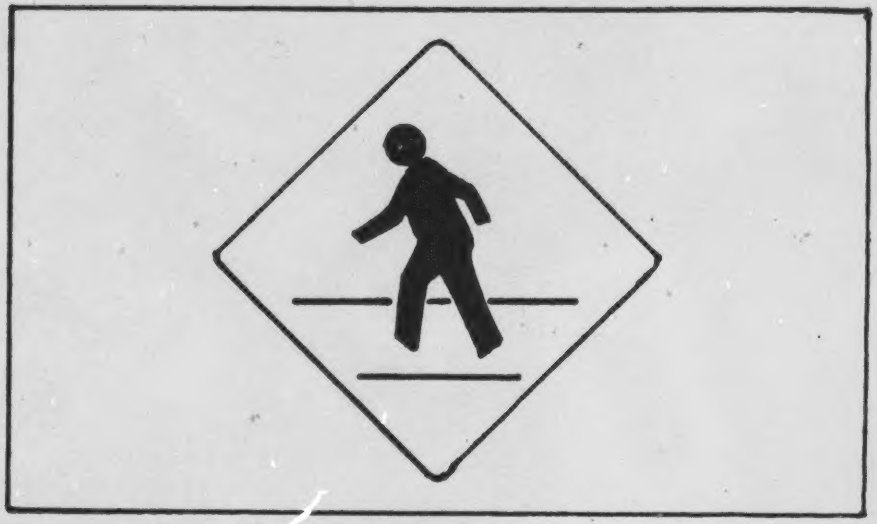
All vehicles must stop when a school bus has stopped to let off children.





What does this sign tell you?

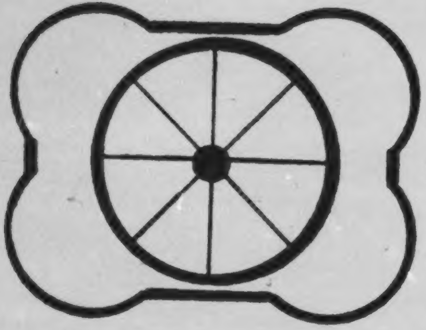


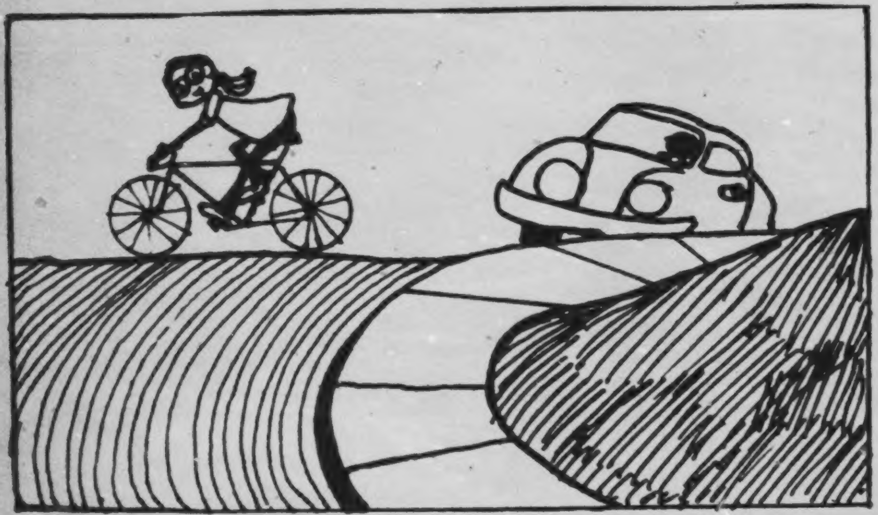


What does this sign tell you?

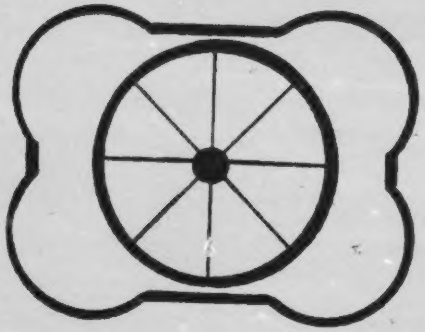
Do not enter.

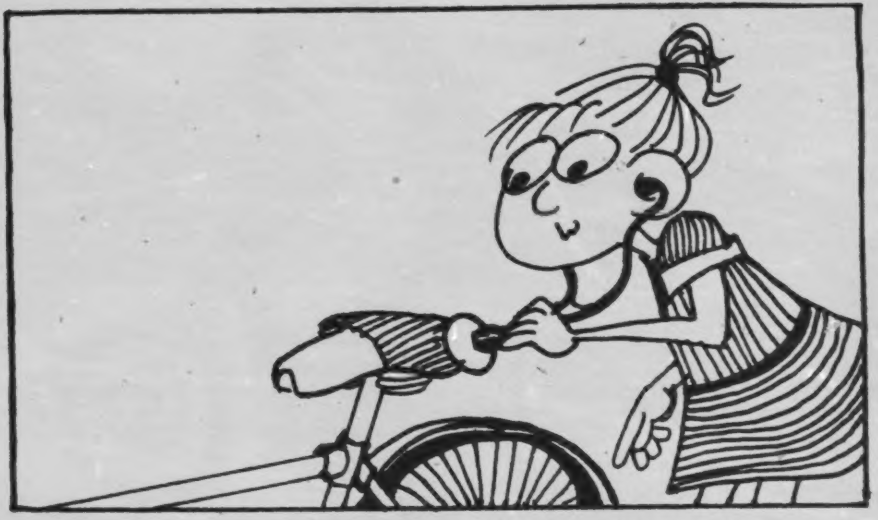
There is a pedestrian crosswalk.





You are crossing at a curve, you forgot to check both ways for cars.





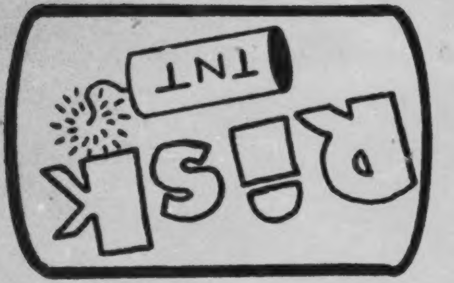
You remembered to give your bike a safety check.

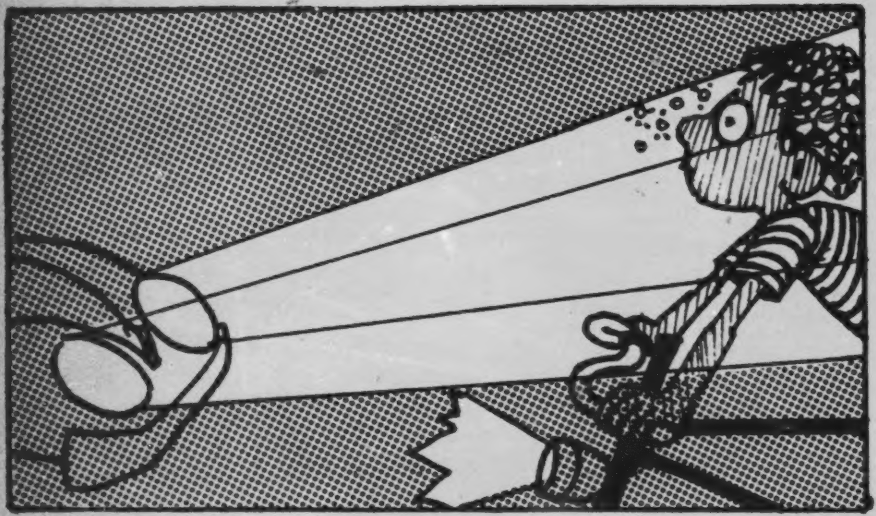
Lose 3 safety points.

442

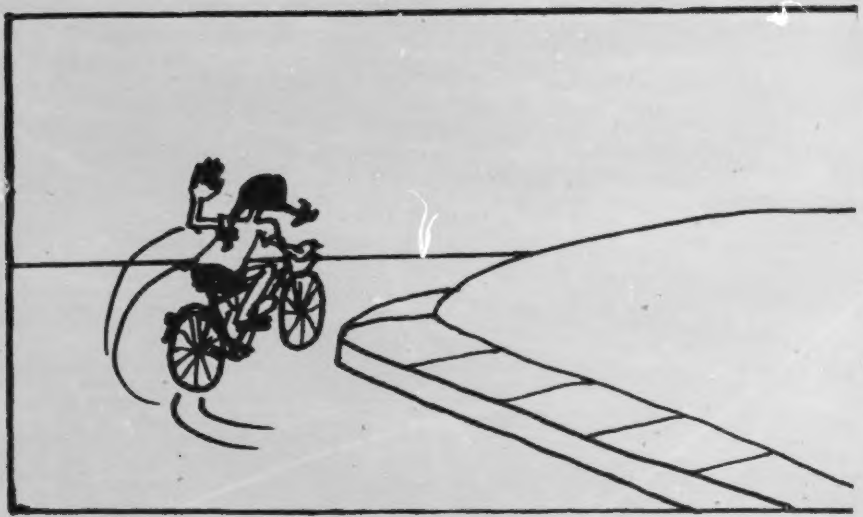
Gain 3 safety points.

443





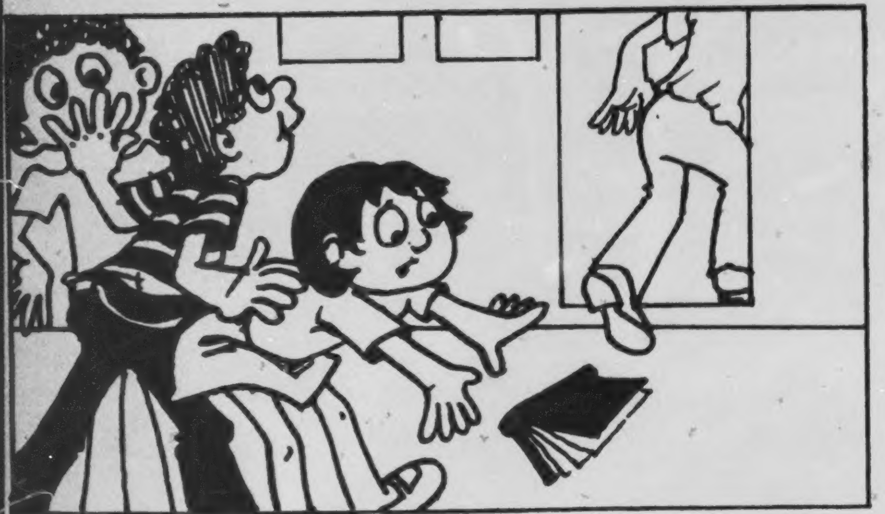
Watch out! You should have been driving with the traffic.



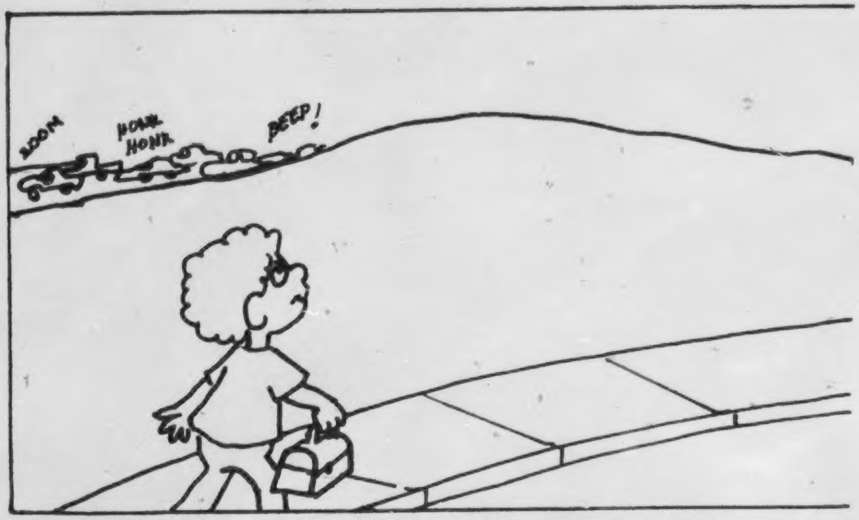
You remembered to give your right hand signal.

Lose 3 safety points.

Gain 3 safety points



You pushed while waiting in line.

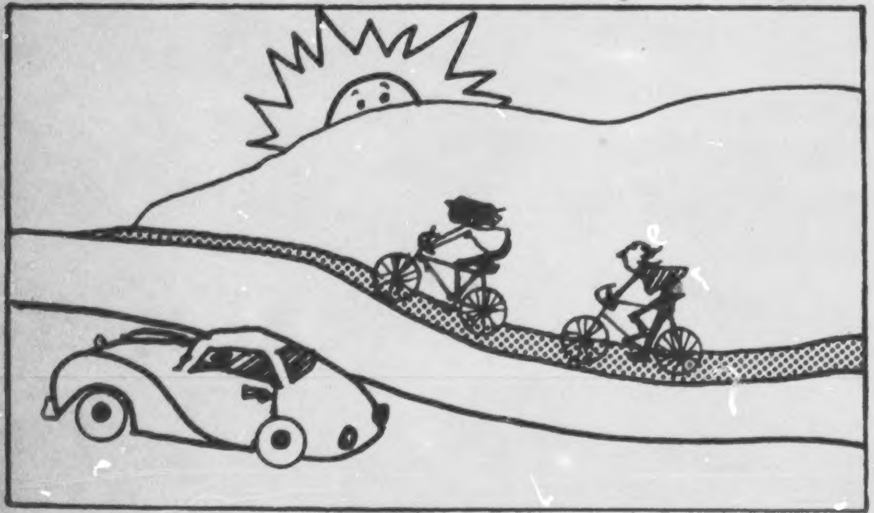


ZOOM
HONK
HONK
BEEP!

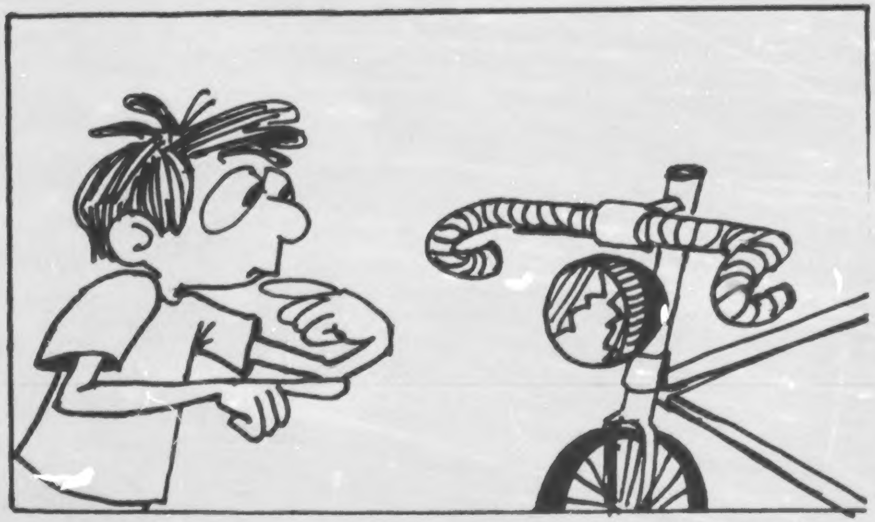
You decided to stay off the road and walk on the sidewalk.

Lose 2 safety points.

Gain 3 safety points.



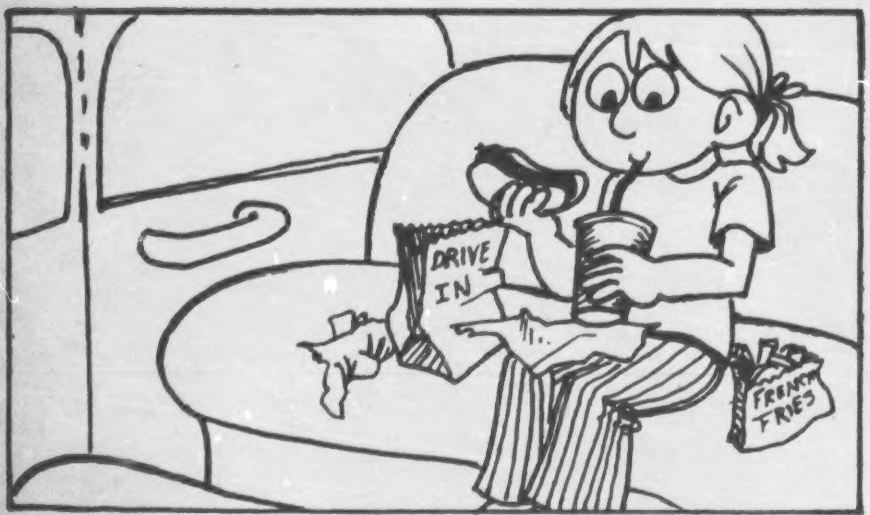
You decided to ride on the bike route, instead of the highway.



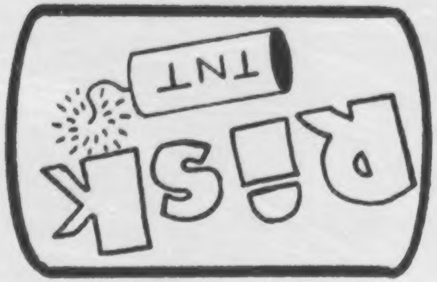
You forgot to fix your headlight. No driving at night.

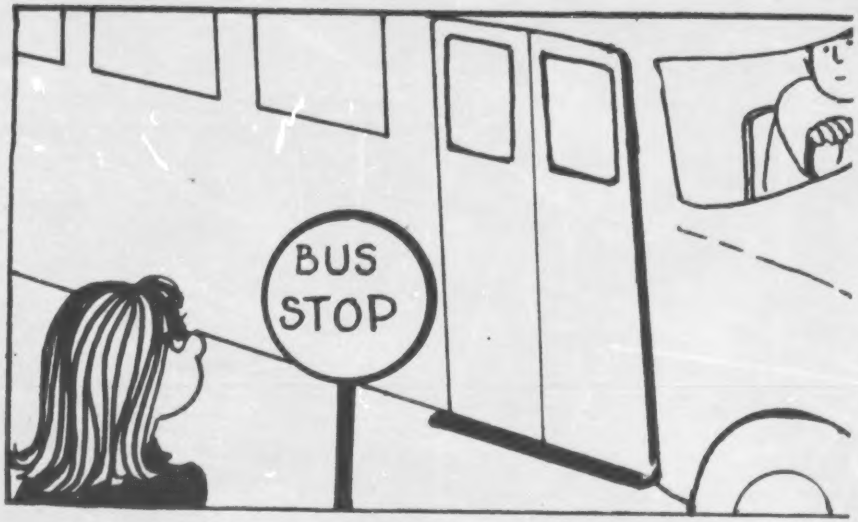
Gain 2 safety points.

Lose 2 safety points.


DRIVE IN
FRENCH FRIES

You threw trash out of the car.

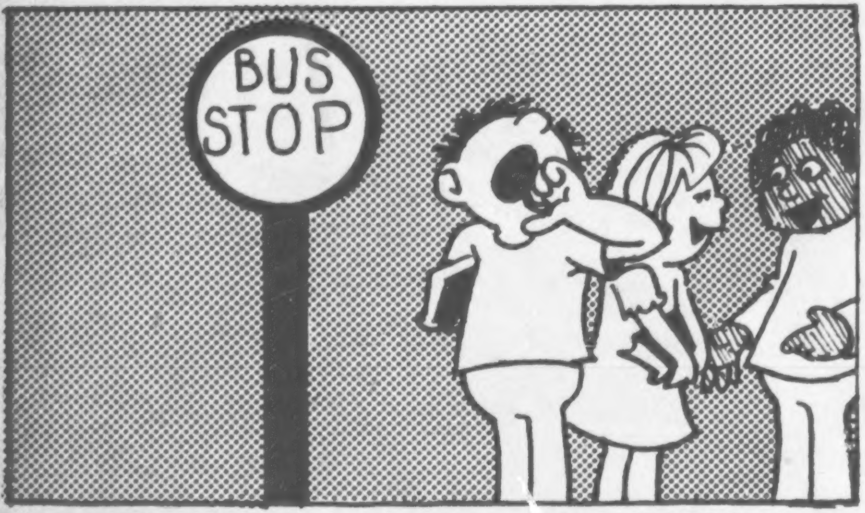




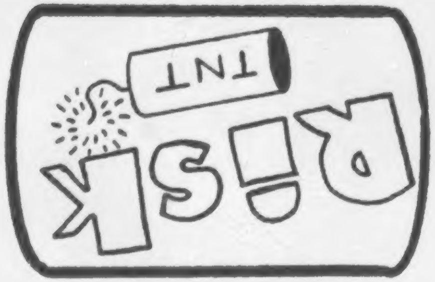
You stand back and wait for the bus driver to open the door.

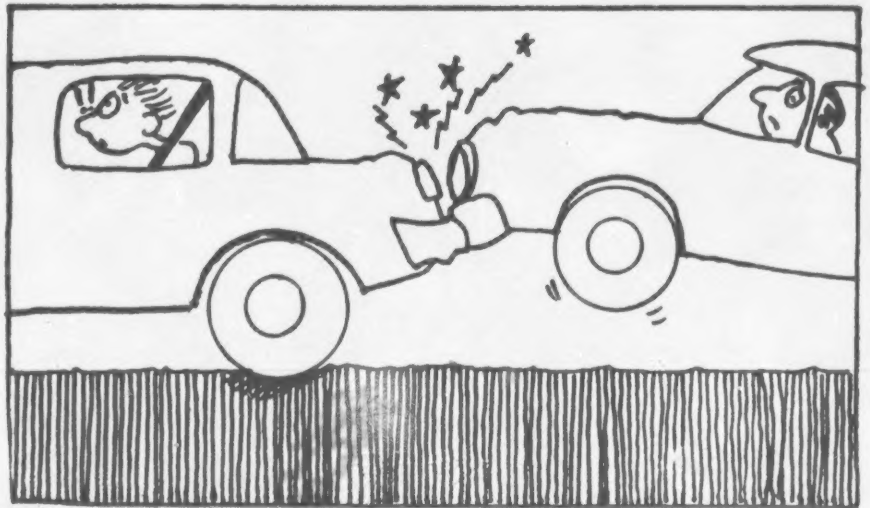
Lose 2 safety points.

Gain 2 safety points.



It is dark in the morning, and you remembered to wear light colors.

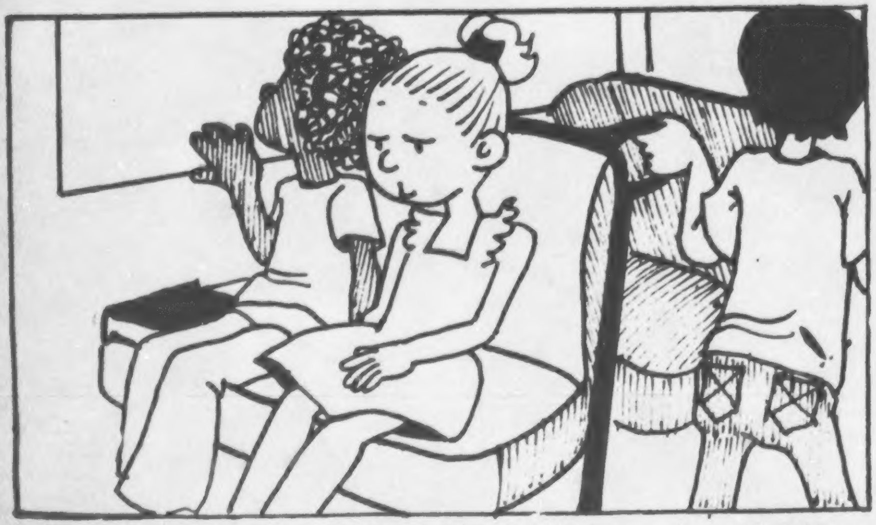




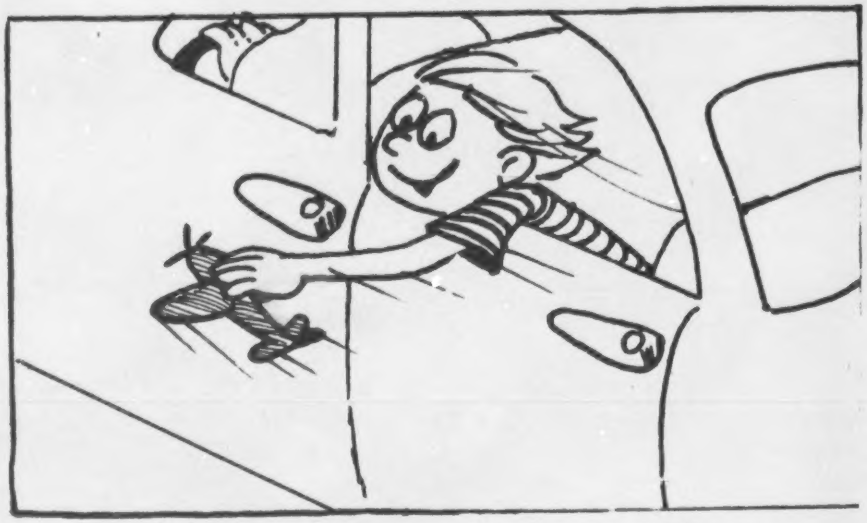
You had your safety belt on.

Gain 2 safety points.

Gain 3 safety points.



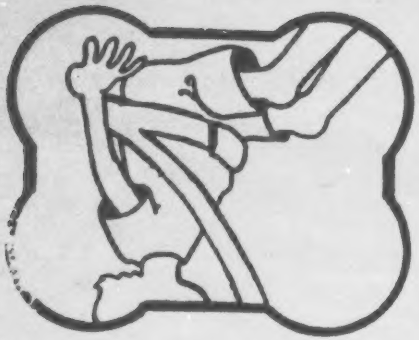
You forgot to face the front of the bus, when standing.

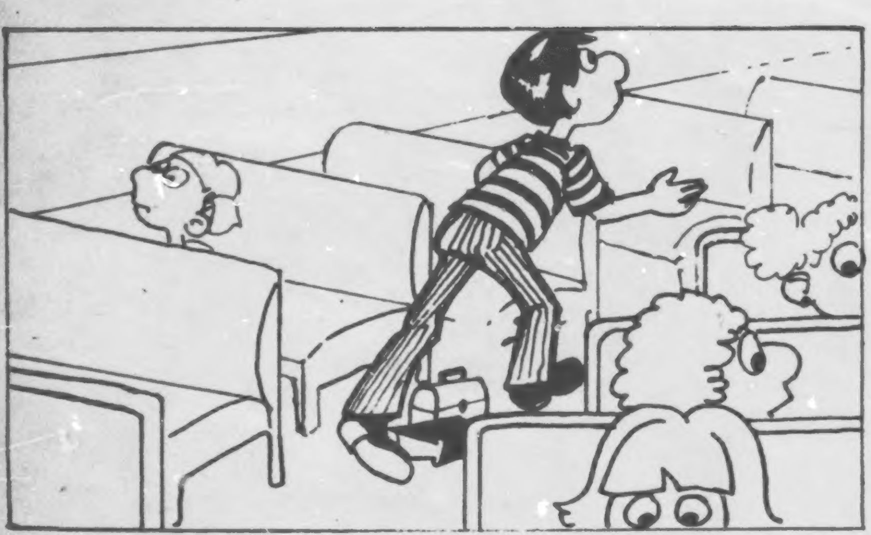


You put your head and arm out the car window.

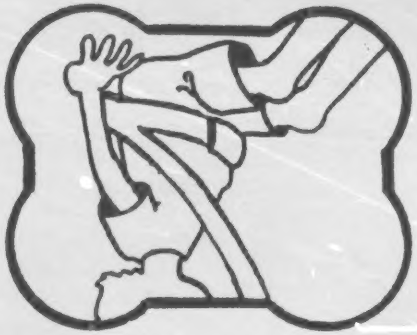
Lose 3 safety points.

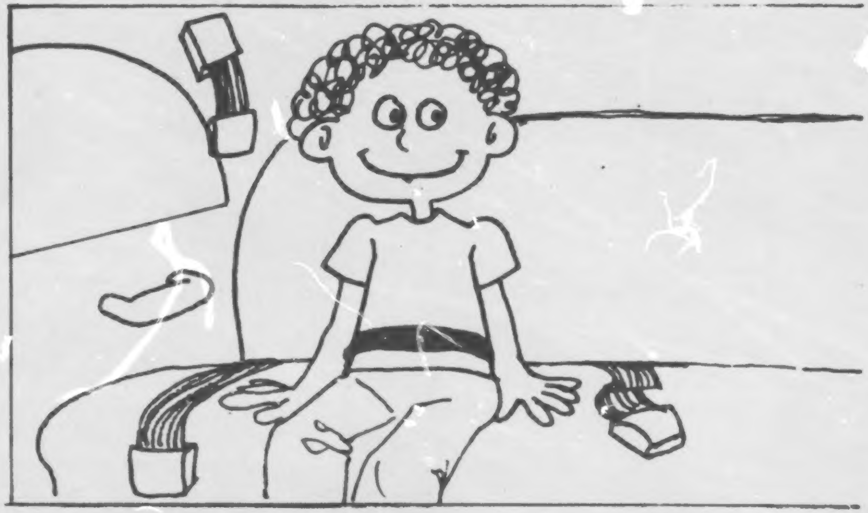
Lose 3 safety points.





Can you find a safety hazard here?

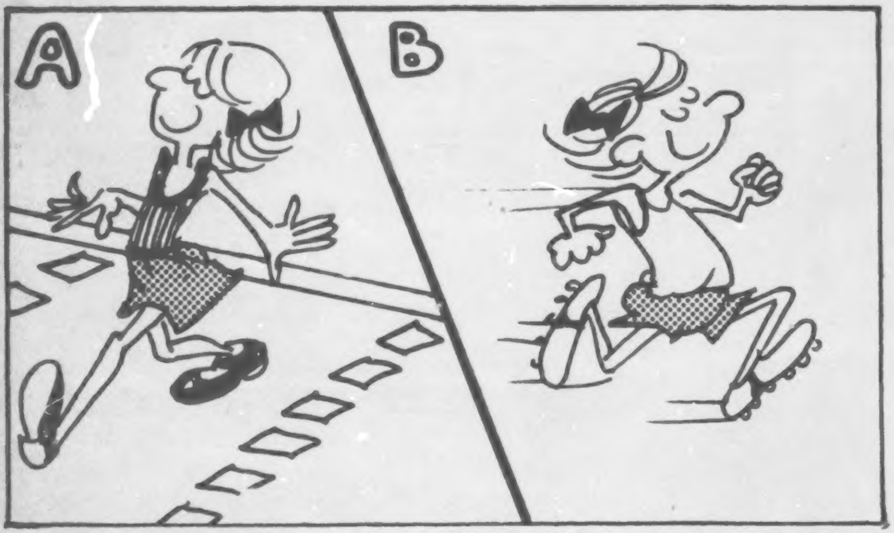




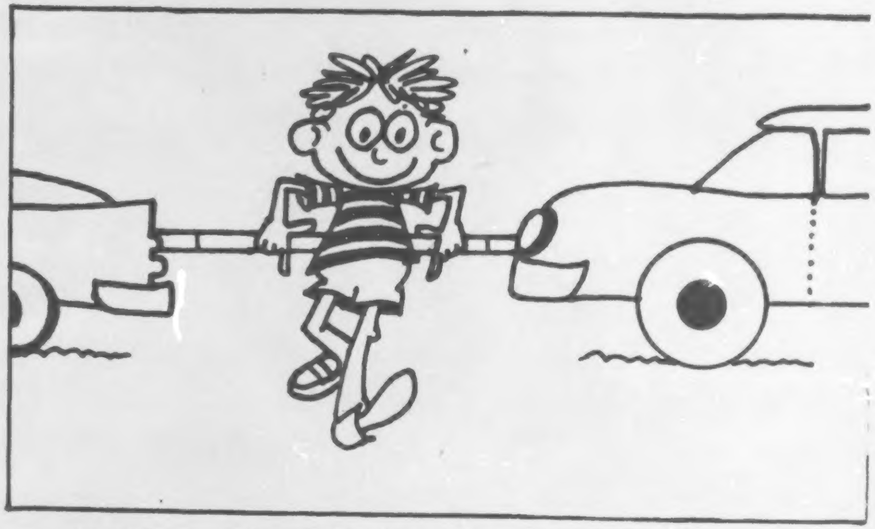
Small children, under 4'7" or 137 cm, should wear a lap belt or shoulder harness?

The books should not be in the aisle.

Only the lap belt.



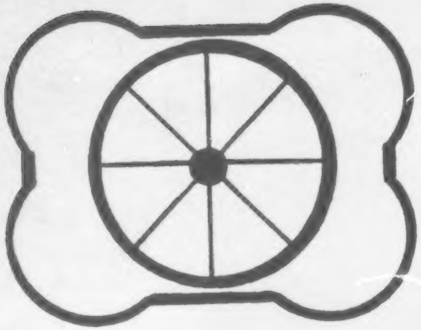
Which girl shows you the safer way to cross the street?

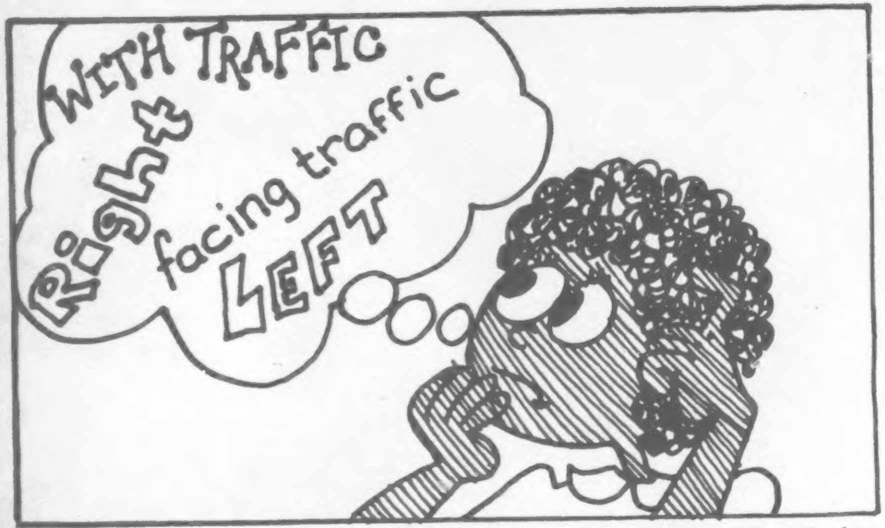


Is this a safe place to cross? Yes or No?

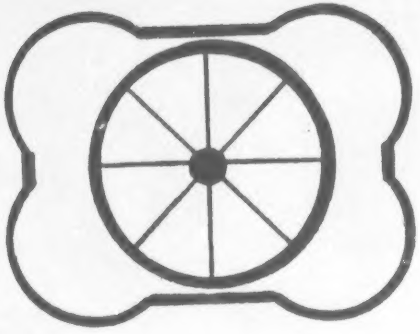
The girl in picture A, she is WALKING, at the crosswalk.

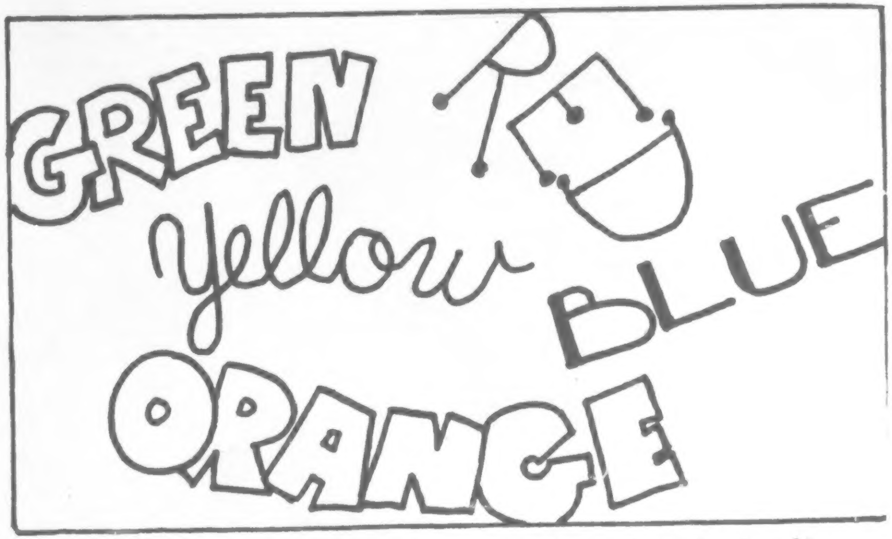
No, never cross from between two parked cars.




WITH TRAFFIC
Right
facing traffic
LEFT

When you ride your bike, which way should you be going?



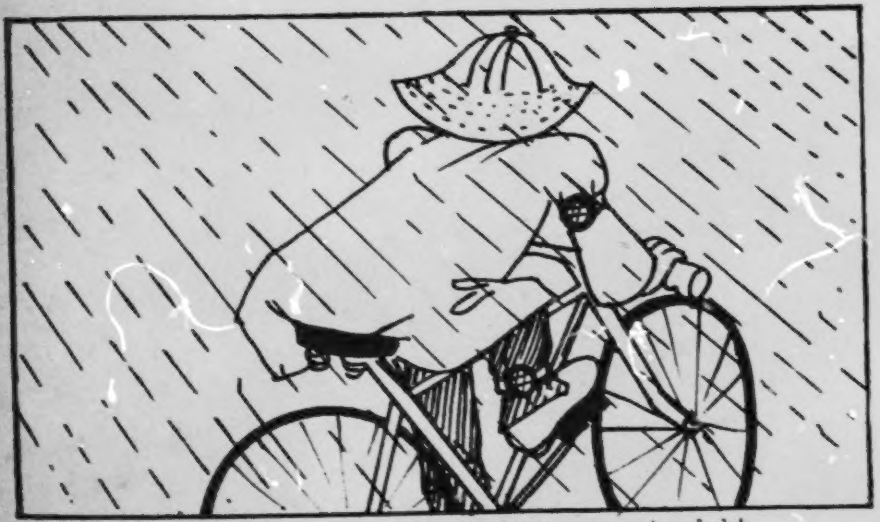

GREEN
RED
Yellow
BLUE
ORANGE

Which color sign warns you about road work ahead?

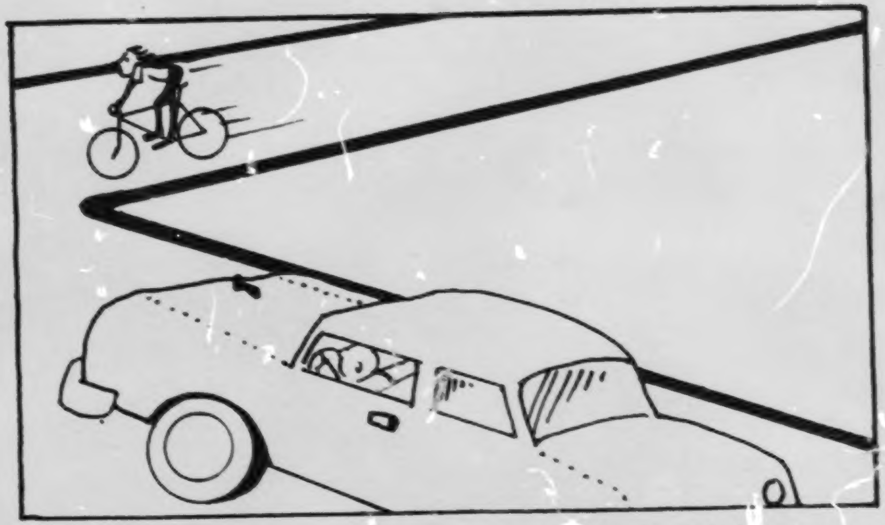
With the traffic, on the right side of the road.

---

orange.



You are wearing white and a reflector, at night.



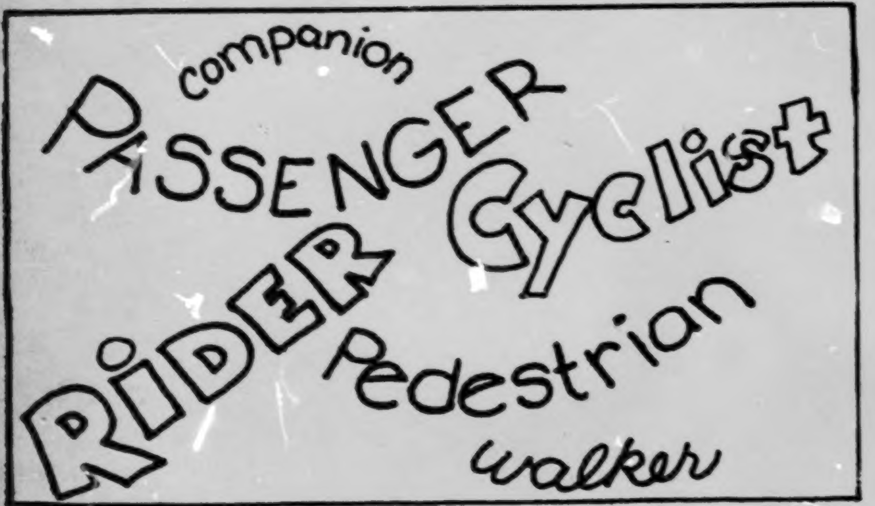
There are no traffic signals--and you forgot t watch out.

Gain 2 safety points.

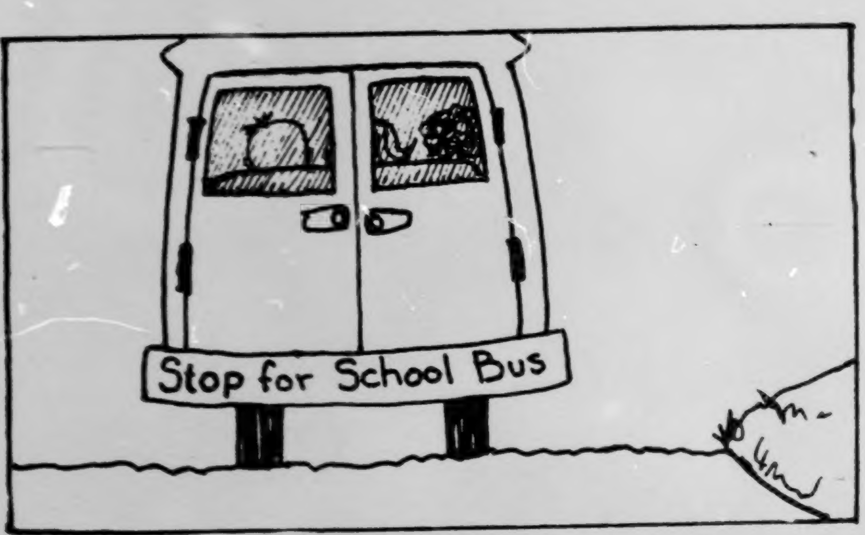
482

Lose 3 safety points.

483


companion
PASSENGER
Cyclist
RIDER
Pedestrian
walker

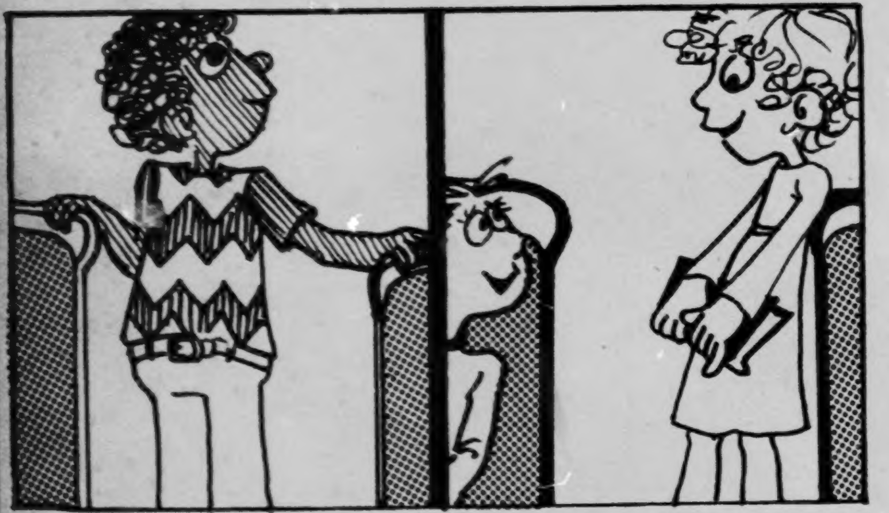
A person who rides in a vehicle is called a ________.


Stop for School Bus

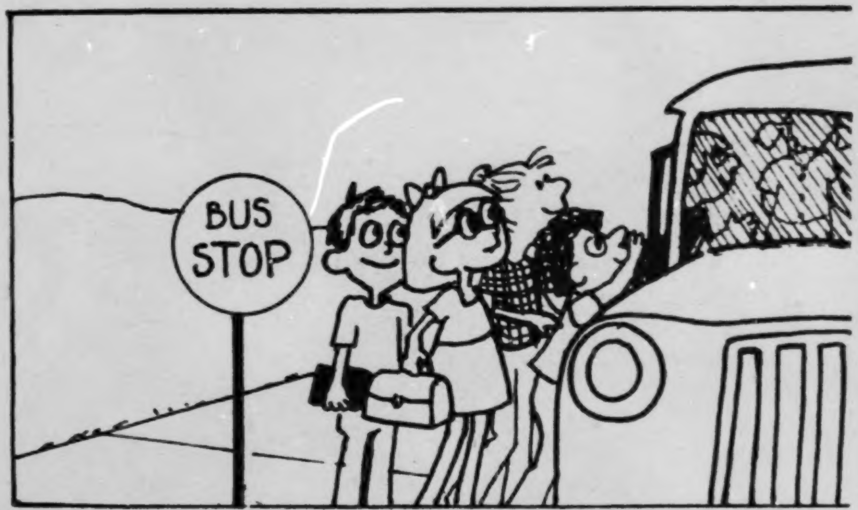
What are the doors at the back of the bus called?
Why?

Passenger.

They are the emergency doors, to be opened in the case of an accident.



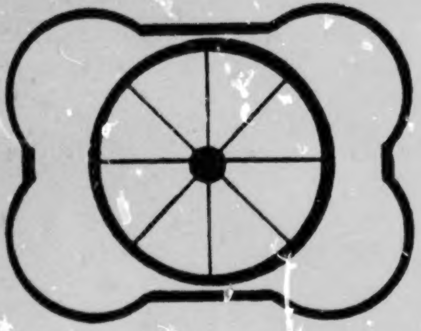
If you have to ride standing, what should you do?

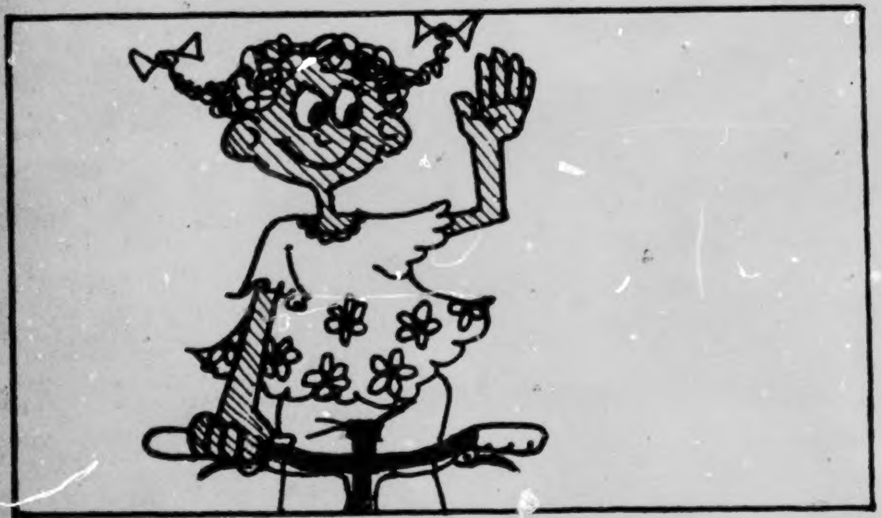


What is the first thing you should do after getting on a bus?

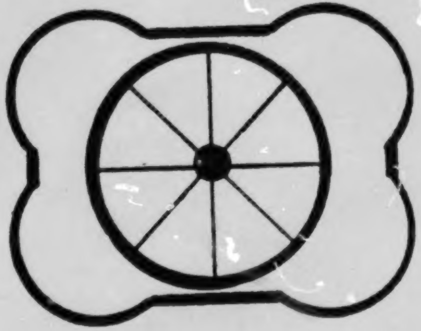
Hold on to two seat grips.

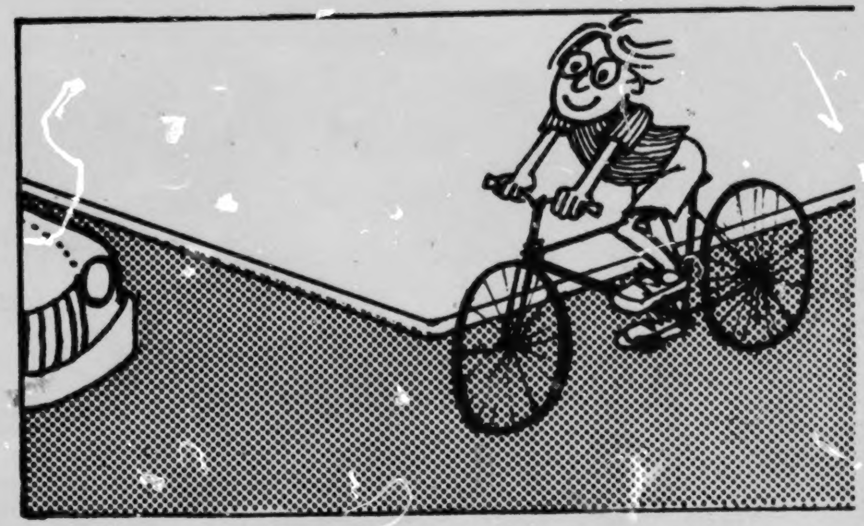
Take a seat and sit down.





which way is this girl going to turn?

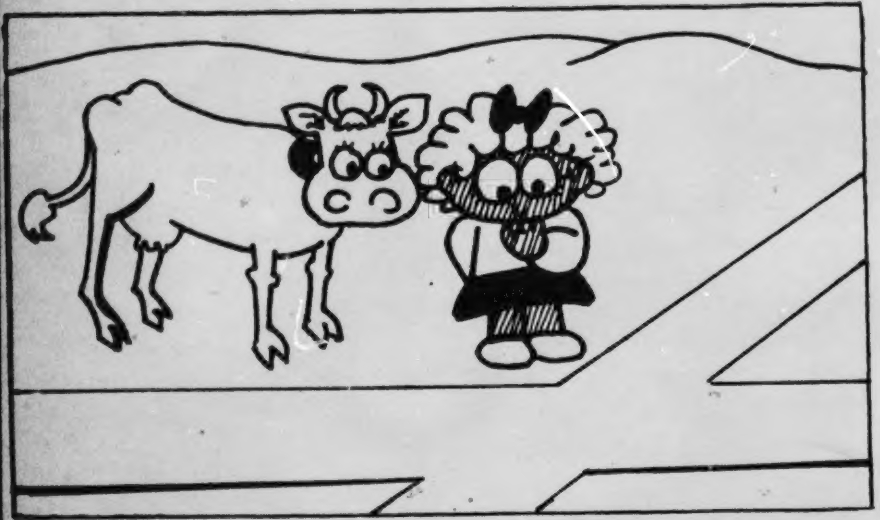




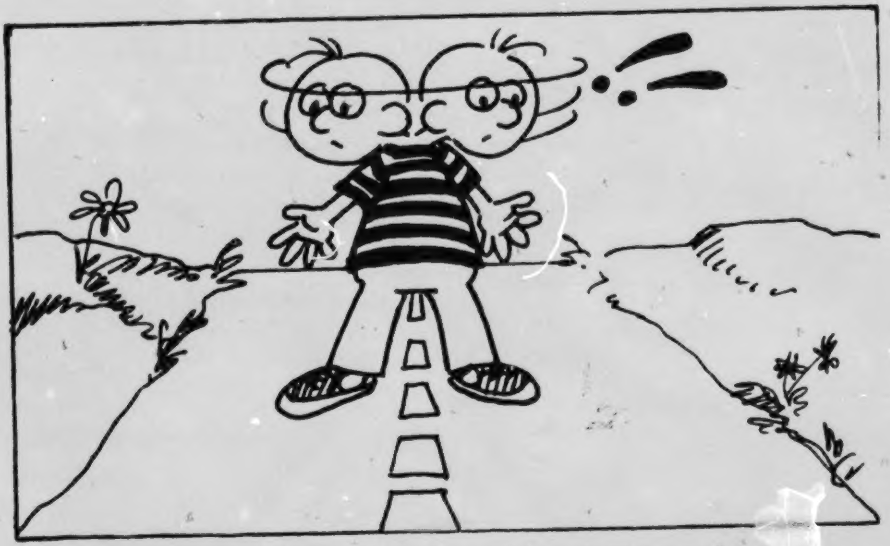
Who has the right of way here?

To the right.

The car, it is on the right.



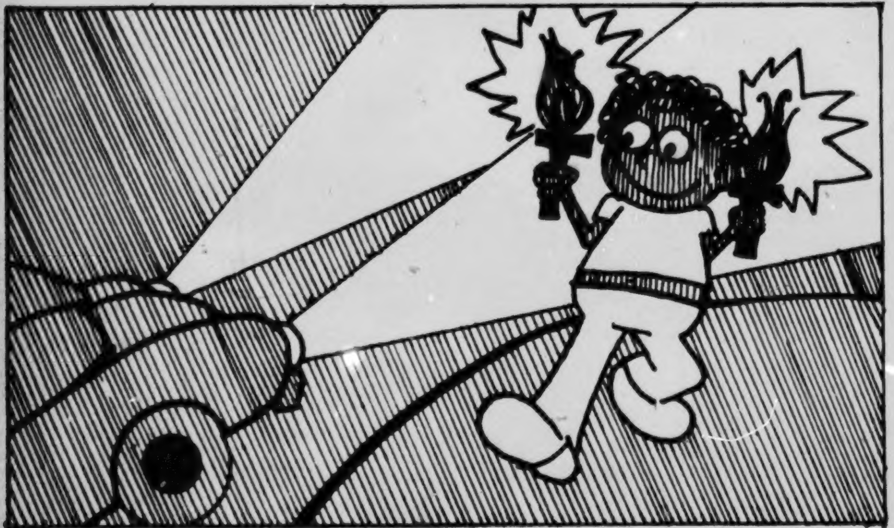
What should you do before you cross this country road?



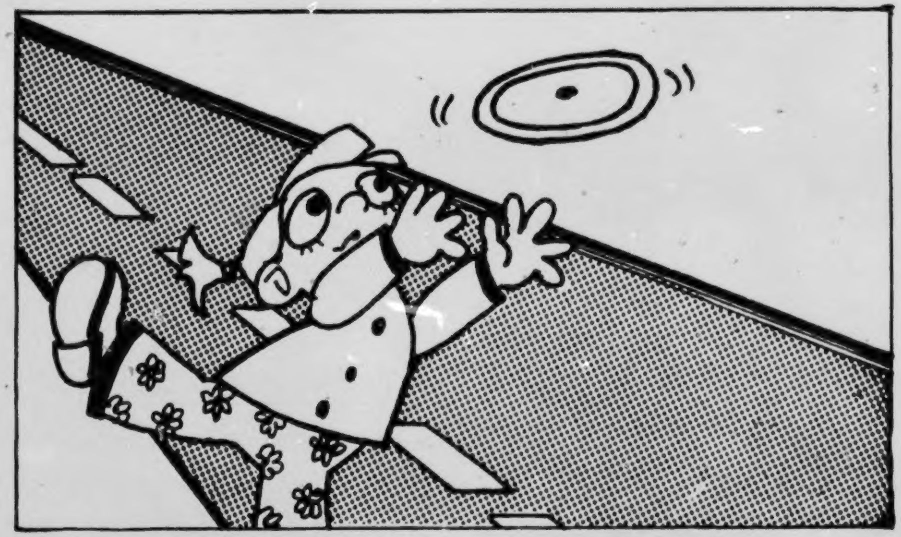
There is no sidewalk. Which side of the road should you walk on?

Stop, look and LISTEN for traffic.

The left, facing traffic.



You are walking on the road at night. You are wearing white and carrying a flashlight.



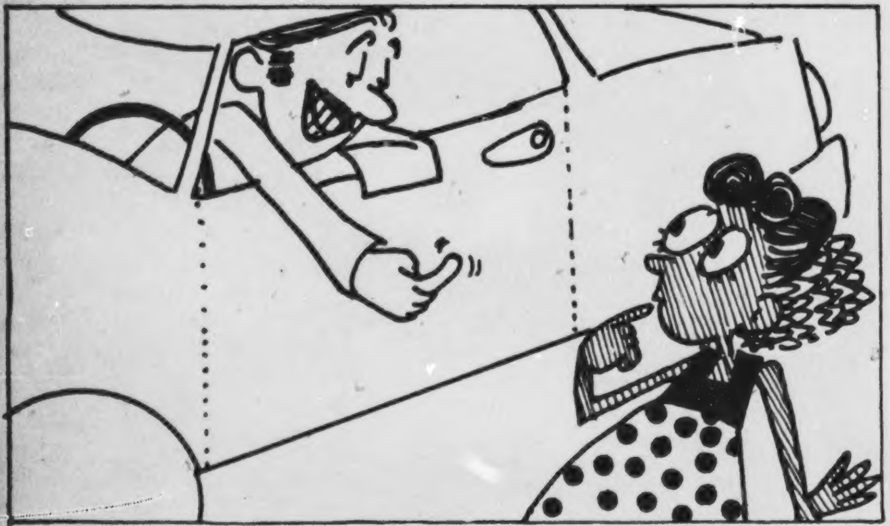
You ran into the middle of the street, while trying to catch a frisbee.

Gain 2 safety points.

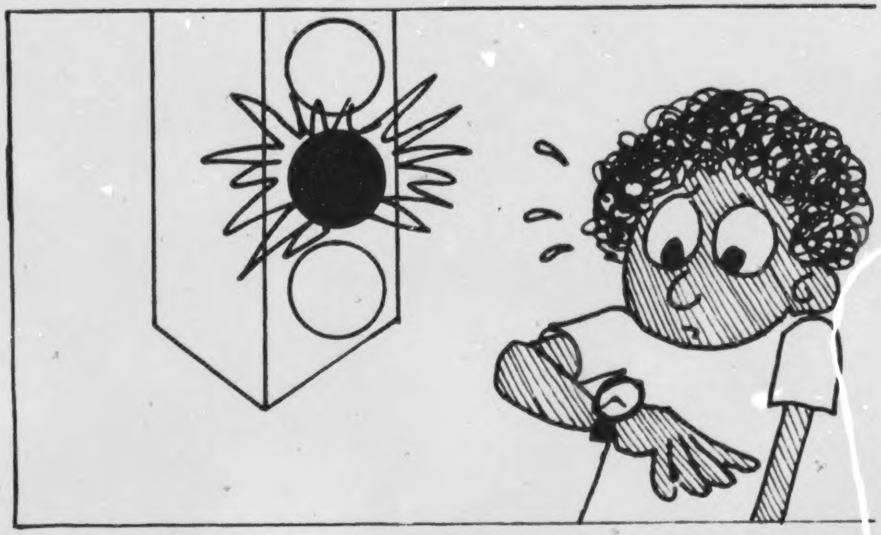
502

Lose 3 safety points.

503



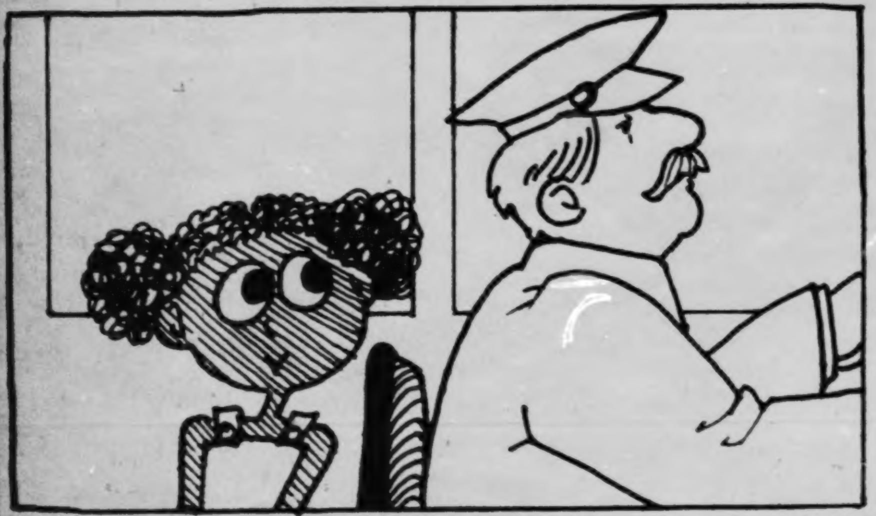
Should you take a ride with this stranger?



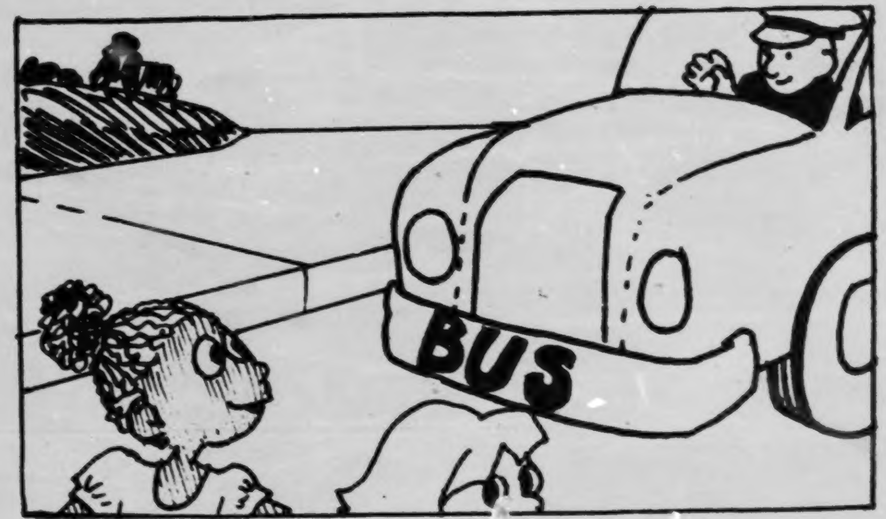
Does this boy have time to cross the street?

No, do not stop to talk to him, or get in the car.

No, the light is yellow, he must wait.



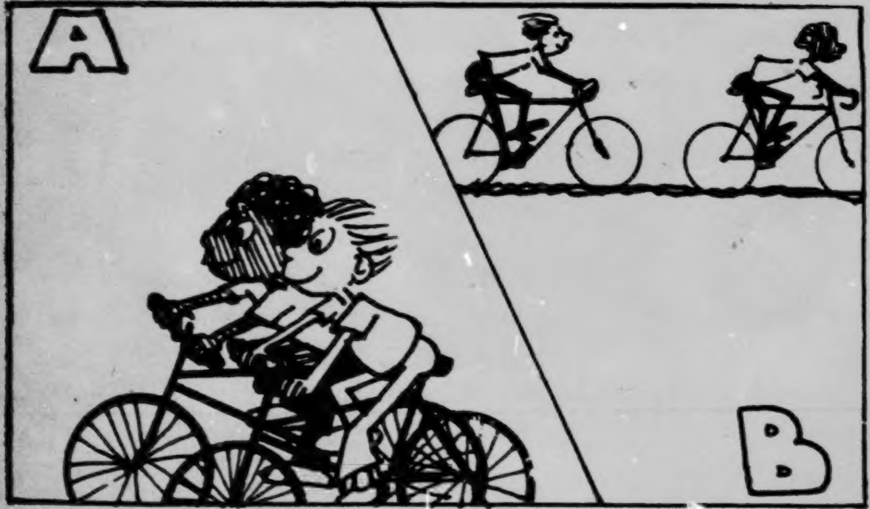
Should you talk to the bus driver to keep him alert?



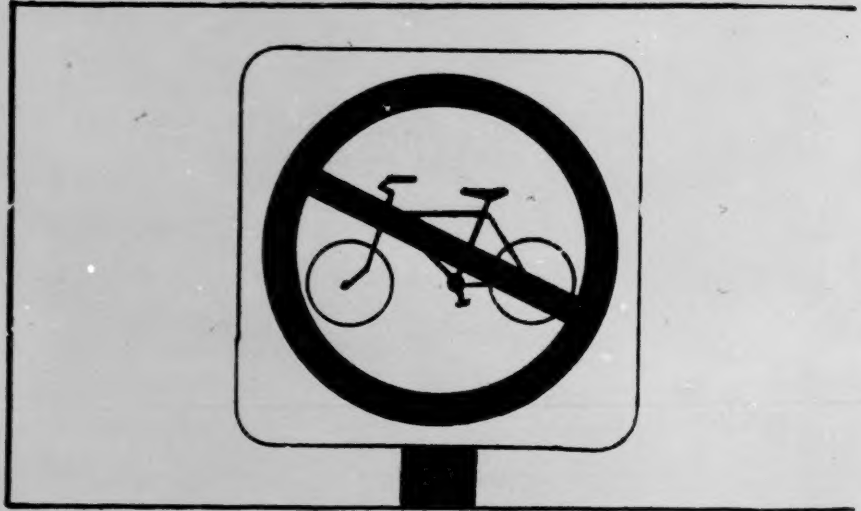
Why are these girls crossing safely?

No, it will distract him from driving.

They are crossing in front of the bus.



If you are riding with a friend, which way is safe?



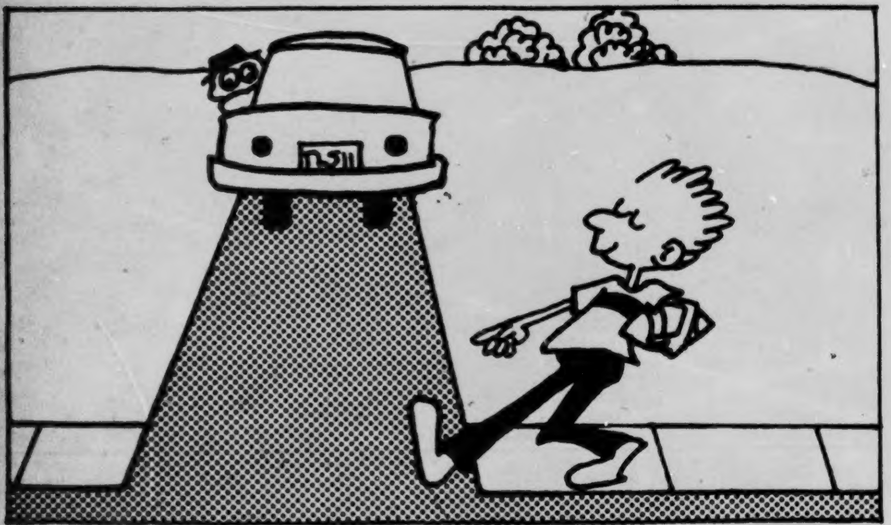
What does this sign tell you?

Picture B: **riding** in **single file.**

No bicycles can be driven here.

TNT

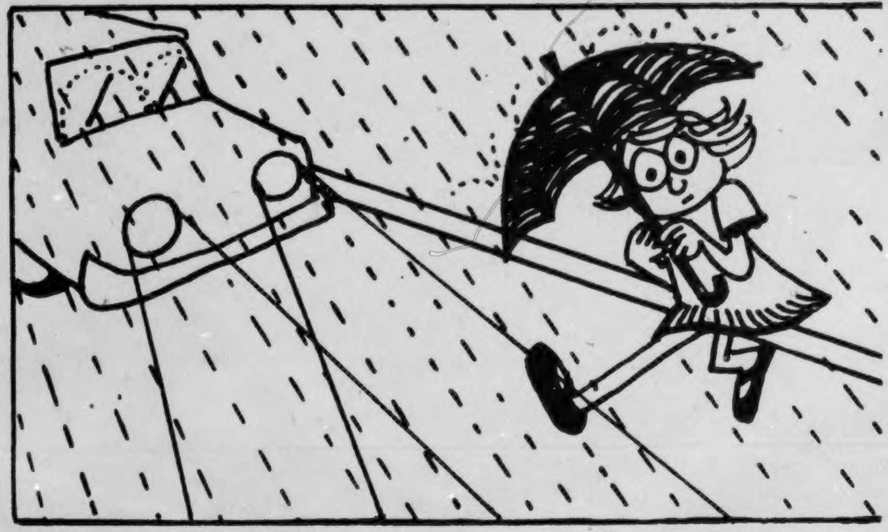
RiSK



You walked across this driveway--and forgot to watch for the car backing out.

TNT

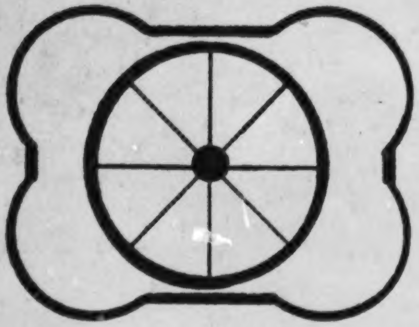
RiSK

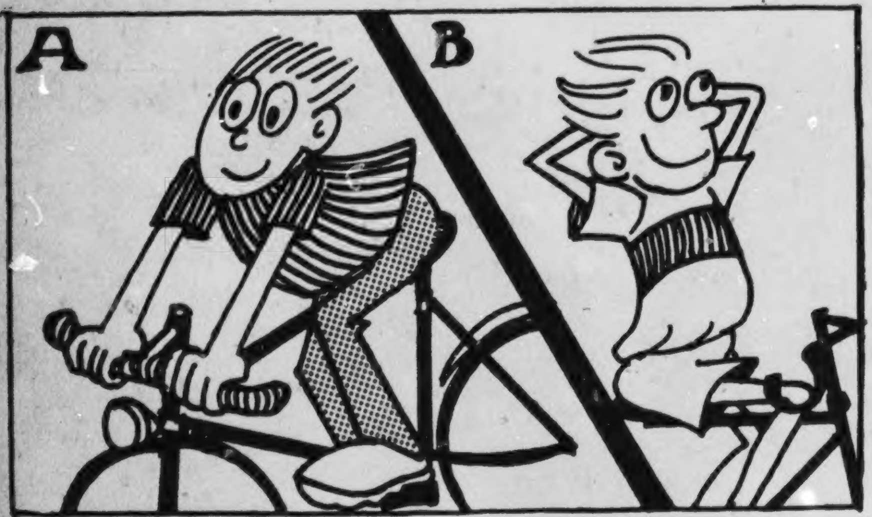


The car didn't see you--and you didn't see the car.

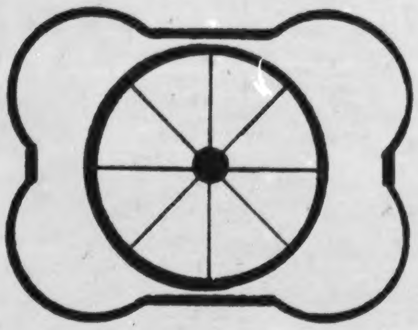
Lose 3 safety points.

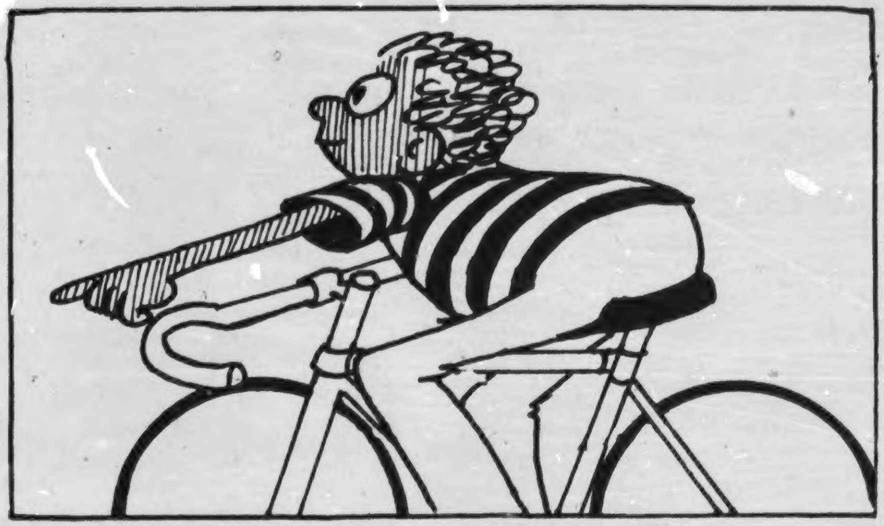
Lose 3 safety points.





Who is riding his bike safely?

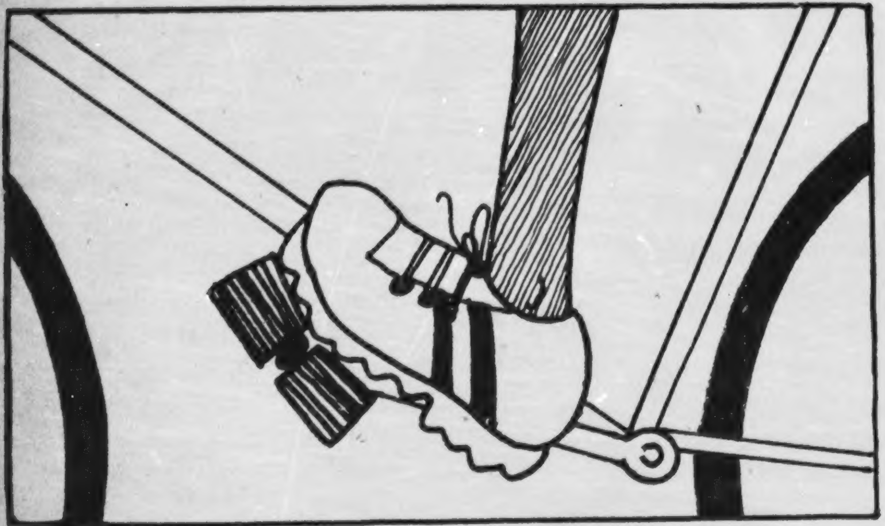




What does this boy's hand signal mean?

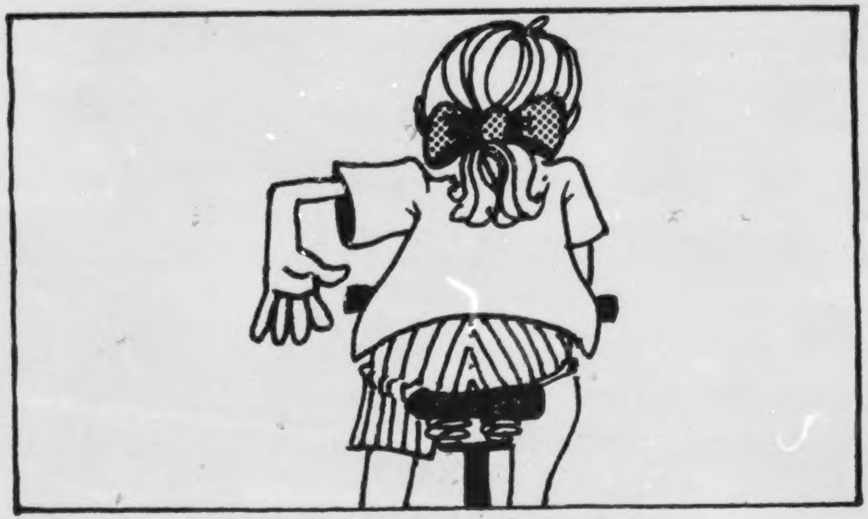
The boy in picture A, he is holding on to the handlebars with both hands.

He wants to turn left.



Should you use the heel or the ball of your foot to pedal?

524



What does this girl's hand signal mean?

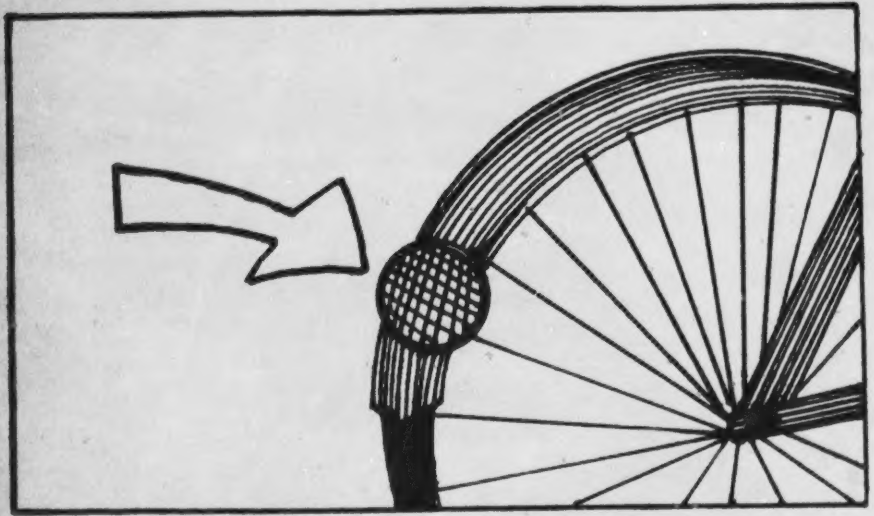
525

Use the ball of your foot.

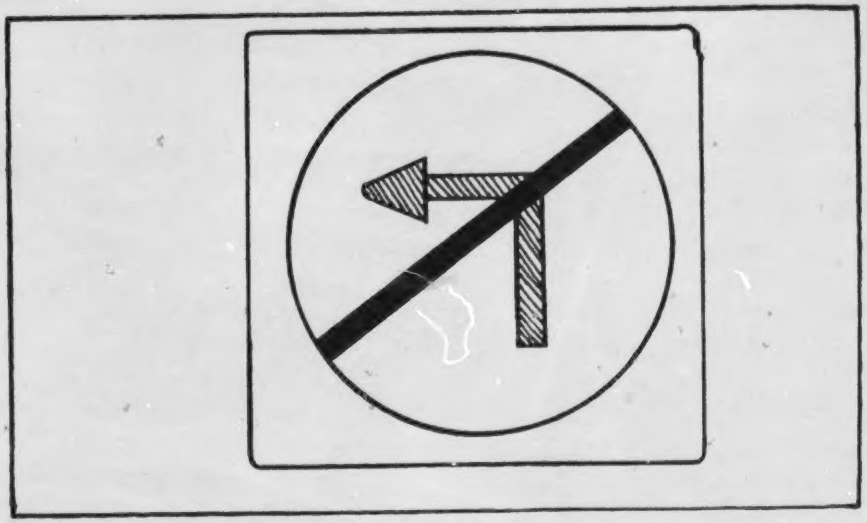
526

She is going to stop.

527



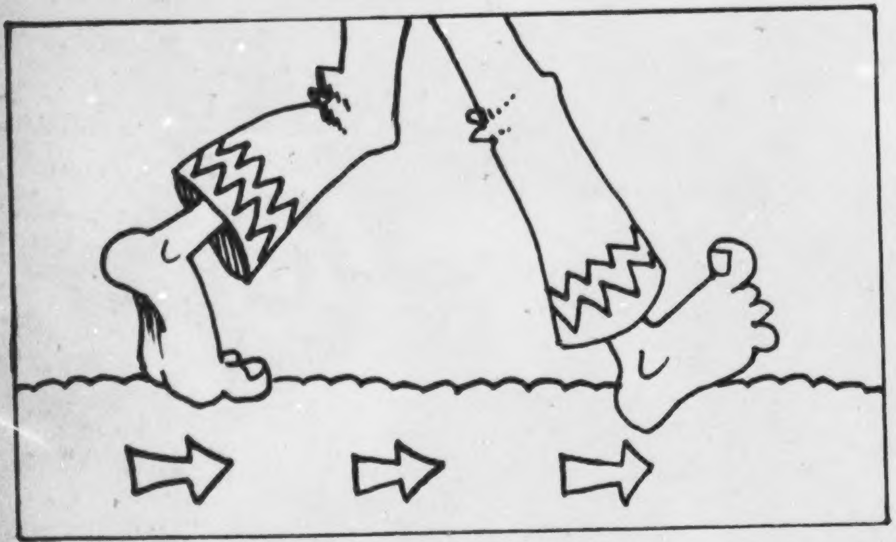
What is this called and what does it do?



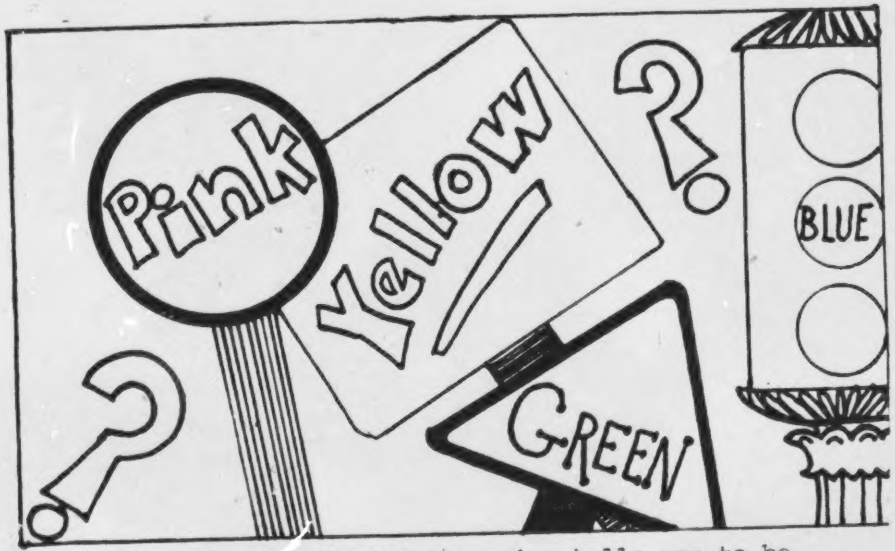
What does this sign tell you?

A reflector, it reflects light at night.

No left turn.



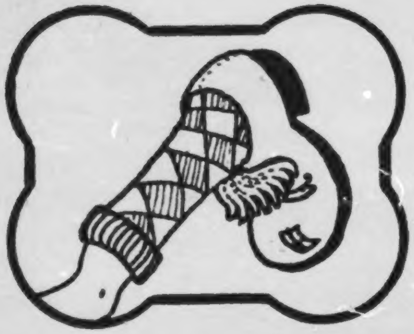
A person who walks on foot is called a ___________.

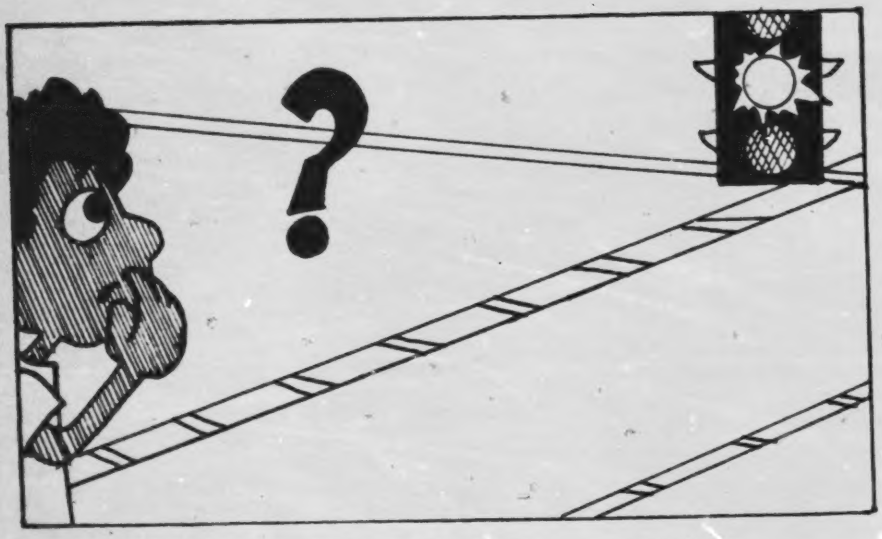

Pink
Yellow
GREEN
BLUE

What color traffic light or sign tells you to be careful or cautious?

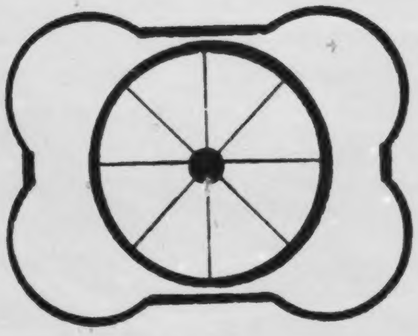
pedestrian

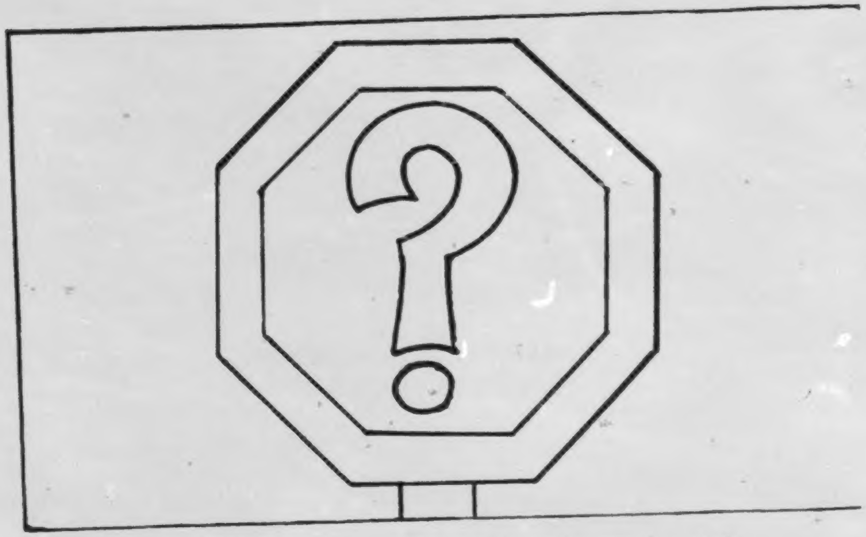
yellow





What does this traffic light tell you to do?

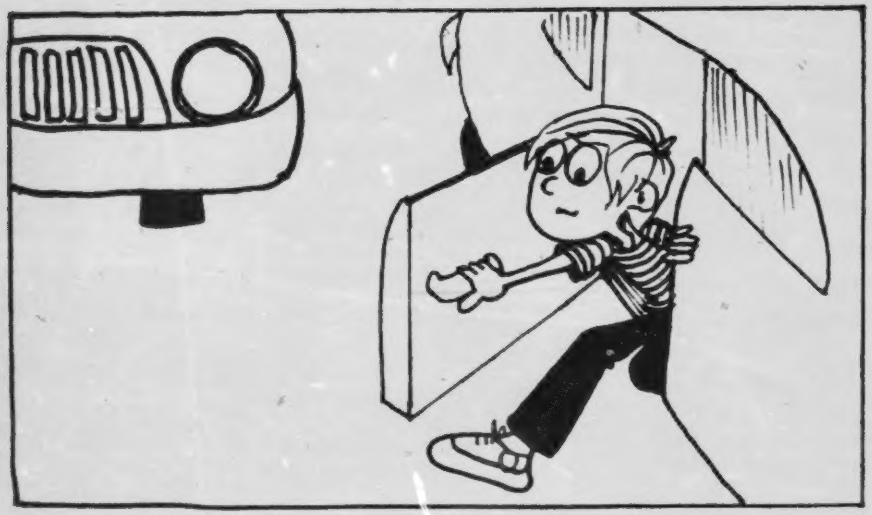




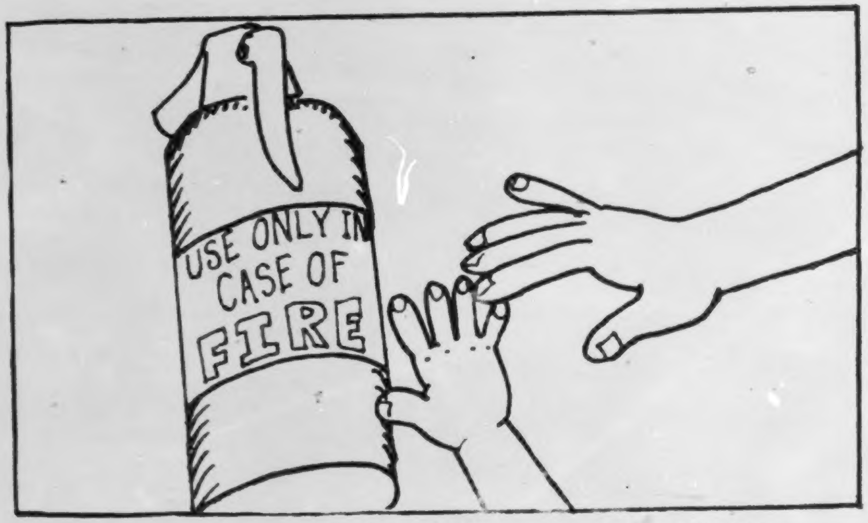
What does this shape sign tell drivers to do?

Wait, the yellow light is going to turn red.

To stop.



You got out of the car on the street side.


USE ONLY IN CASE OF FIRE

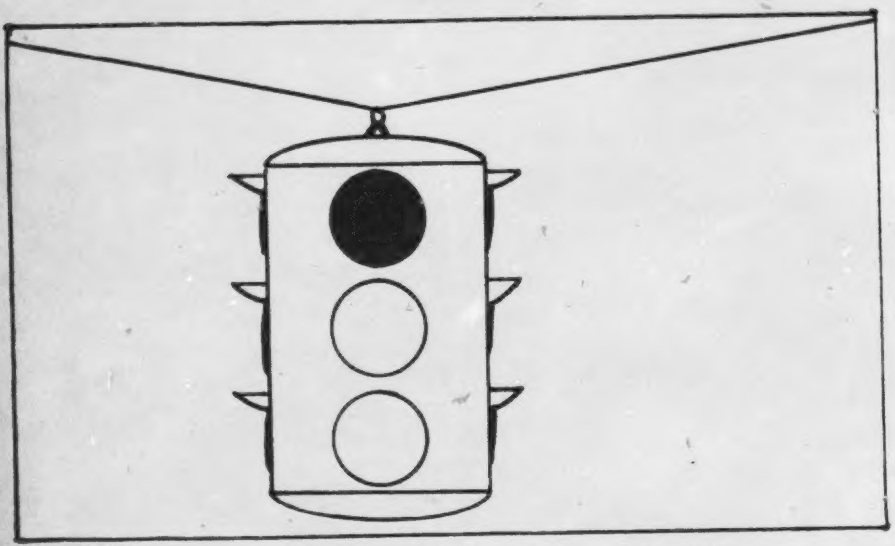
You stopped a small child from fooling with the fire extinguisher.

Lose 3 safety points.

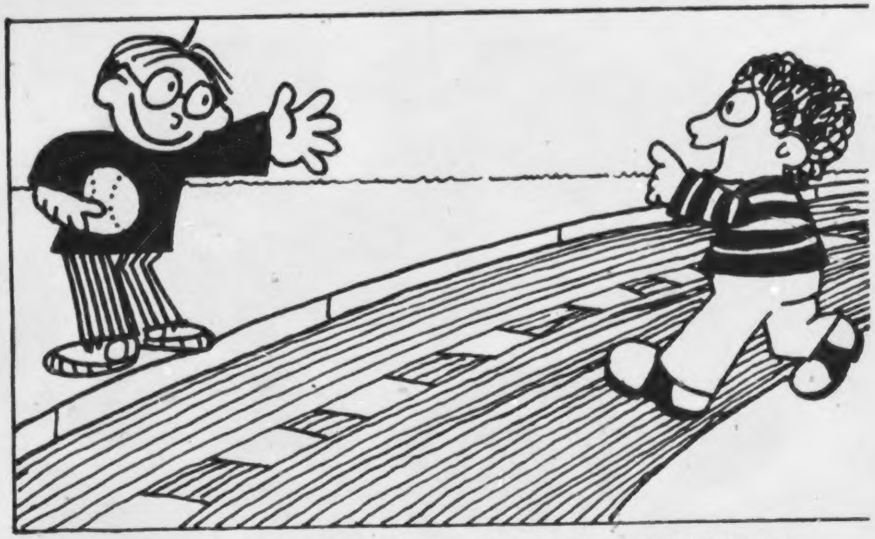
Gain 2 safety points.

542

543



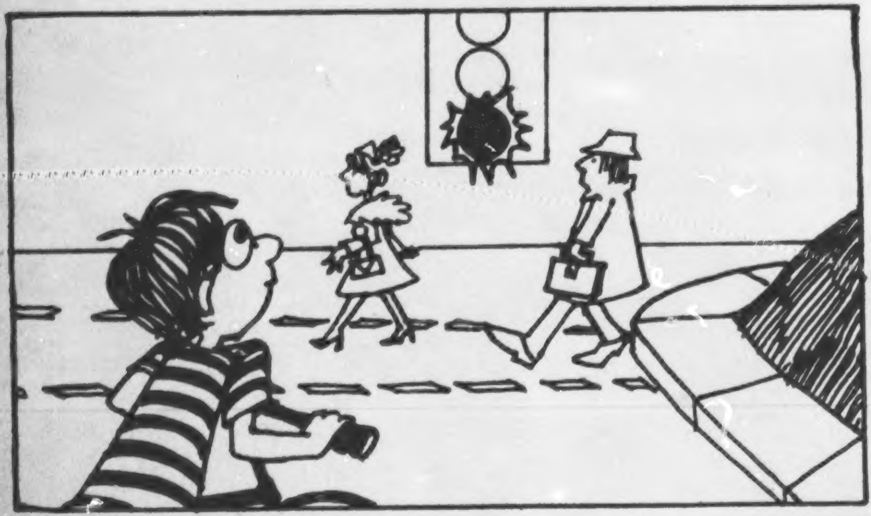
What does this traffic light tell you to do?



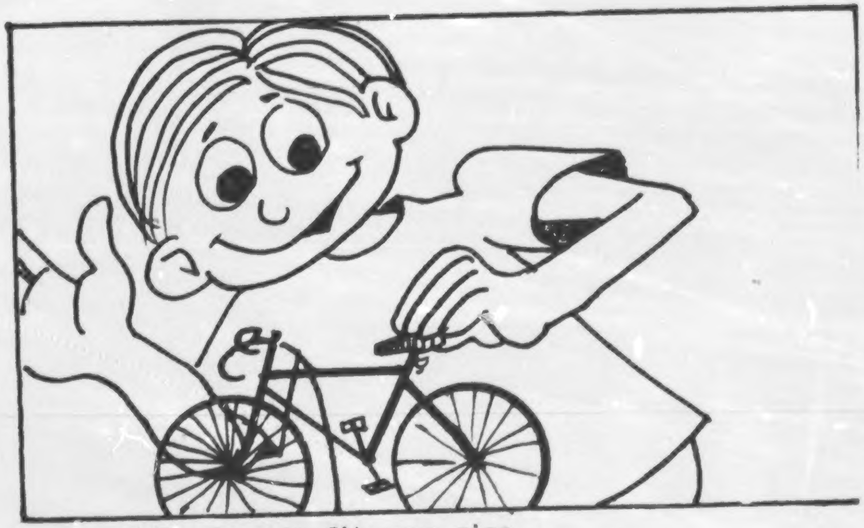
When you cross where there is no corner or crosswalk, you are ______________.

Stop.

jaywalking



You remembered to wait for the pedestrians to cross.

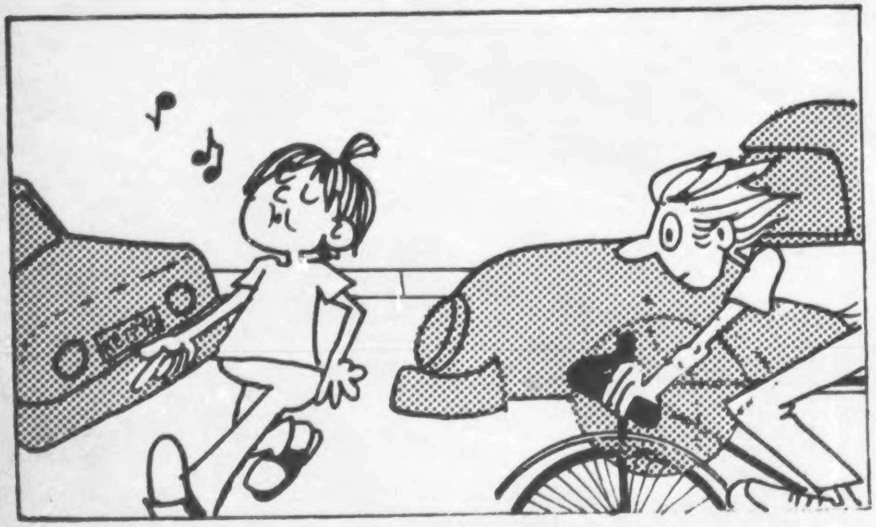


Your bike doesn't fit your size.

Gain 3 safety points.

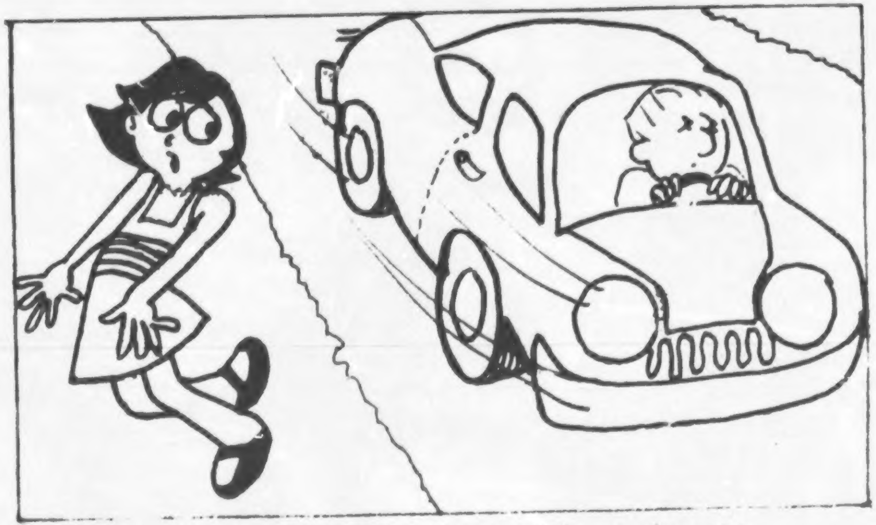
Lose 2 safety points.

RISK
TNT



You've walked between two parked cars--and were hit by a cyclist.

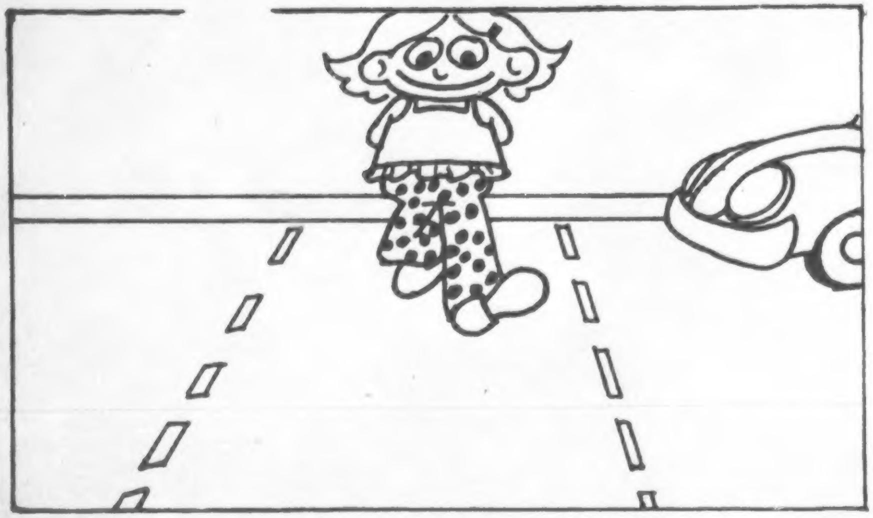
RISK
TNT



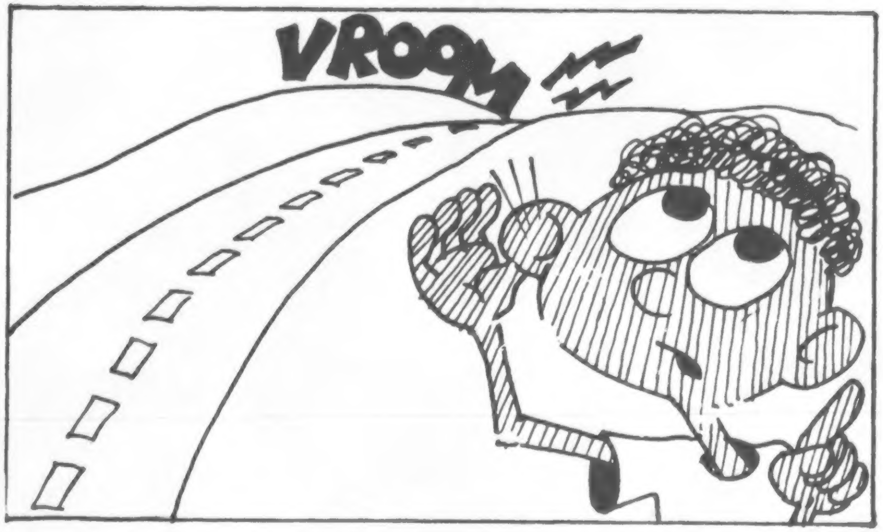
You forgot to walk facing the traffic--and a car just missed you.

Lose 3 safety points.

Lose 3 safety points.



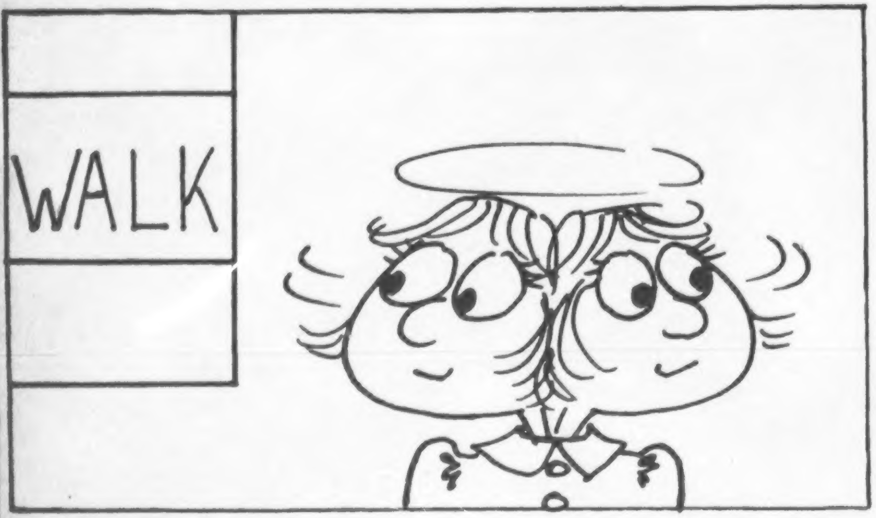
You walked across the street, within the crosswalk.



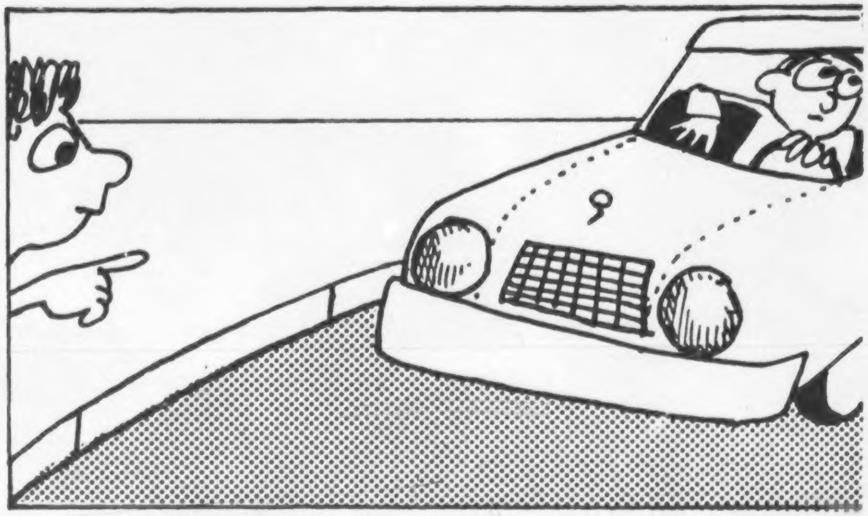
You remembered to listen--and you heard that speeding car.

Gain 3 safety points.

Gain 3 safety points.



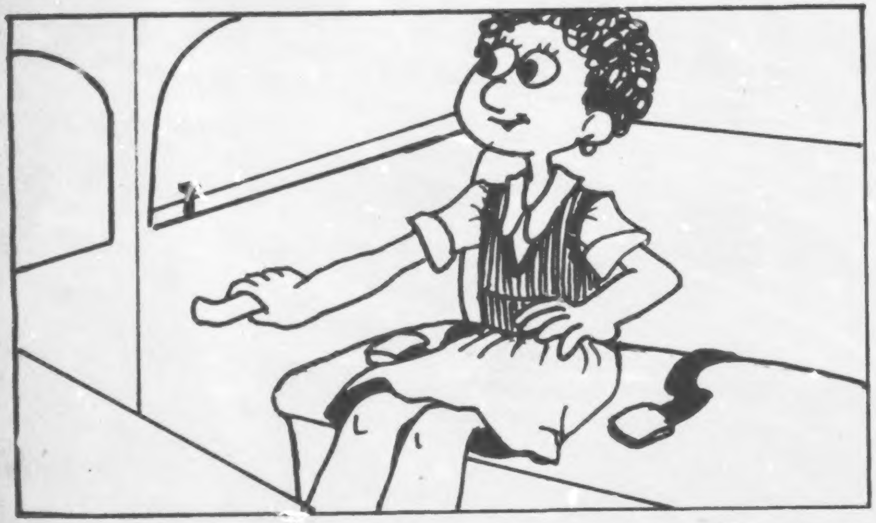
You looked both ways--before you crossed the street.



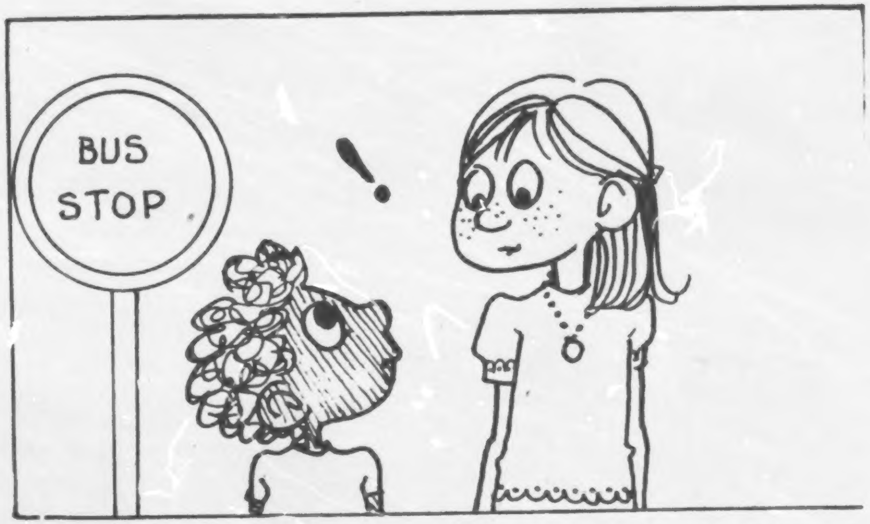
You remembered to watch for cars that might not see you.

Gain 3 safety points.

Gain 3 safety points.



What two things should you do when you get into a car?



Should younger or older children be at the front of the line when waiting for the school bus?

Lock the door.

Fasten your safety belt.

Younger children should get on the bus first.